MicroPro®

WORDSTAR®
PROFESSIONAL

WORDSTAR®
PROFESSIONAL

Release 4

COPYRIGHT 1979, 1987 MICROPRO INTERNATIONAL CORPORATION®
MicroPro. 33 SAN PABLO AVENUE • SAN RAFAEL, CALIFORNIA 94903 • USA

4020-A

Copyright Notice

Copyright 1979, 1987 by MicroPro International Corporation. All rights reserved.

No part of this publication may be copied or distributed, transmitted, transcribed, stored in a retrieval system, or translated into any human or computer language, in any form or by any means, electronic, mechanical, magnetic, manual, or otherwise, or disclosed to third parties without the express written permission of MicroPro International Corporation, 33 San Pablo Avenue, San Rafael, California 94903 U.S.A.

The spelling correction software is licensed from Houghton Mifflin under U.S. Patent No. 4,580,241 and Canadian Patent No. 1,203,916. Copyright © 1983, 1985 Houghton Mifflin. All rights reserved. Reproduction or disassembly of embodied programs or data base prohibited. Based upon *The American Heritage Dictionary*.

Trademarks

MicroPro, MicroPro International Corporation, StarIndex, and WordStar are registered trademarks of MicroPro International Corporation.

Microlytics and Word Finder are trademarks of Microlytics, Inc.

SideKick is a registered trademark of Borland International, Inc.

TABLE OF CONTENTS

Starting

Welcome xi

First, Copy Your Disks xiii
Installing WordStar xix
Starting WordStar xxiv
A Few Important Notes xxv
Special Installation Options for Your Two Floppy Disk Computer xxvi

Learning

Learning WordStar 1

If You're New to Computers 2
The Keyboard Overlay 12
Using the Onscreen Tutorial 13

Training Guide 15

Lesson 1 ■ Learning the Basics 17

Getting Ready 17
Starting WordStar 18
The Opening Menu 19
Getting Onscreen Help 20
Creating a File 21
Typing Text 22
Saving a File 23
Printing 23
Reviewing the Basics 23

Lesson 2 ■ Editing 25

Opening a File 25
The Editing Screen 26
Moving Around in Your Document 27
Erasing and Inserting 29
Using Unerase 30
Correcting with Overtype 31

Erasing with the Del and Backspace Keys 31
Aligning Paragraphs 32
Saving Your File—Backup Files 32

Lesson 3 ■ Formatting Your Document 33

Starting Up 34
The Onscreen Format Menu 35
Centering Text 35
The Ruler Line 35
Clearing Tab Stops 36
Setting Tab Stops with Menu Commands 36
Typing the Column Headings and Text 37
Setting Margins 38
Dot Commands 38
Setting Margins with Dot Commands 39
Changing Justified Text to Ragged Right 39
Printing the Itinerary 40

Lesson 4 ■ Working with Blocks of Text 41

Starting Up 42
The Block & Save Menu 42
Marking a Block 43
Moving a Block 43
Turning Block Display Off 44
Column Mode 44
Block Math 44
Saving or Abandoning a Document 45

Lesson 5 ■ Finding Words and Checking Spelling 47

The Finding Commands 48
The Quick Menu 48
Finding a Word 49
Finding the Next Occurrence 49
Finding and Replacing 49
Automatic Replacing 50
Checking Spelling 51
The Spelling Check Commands 51
Checking the Spelling of a Whole Document 52

Lesson 6 ■ Printing 55

Starting Up 55
Printing and Interrupting Printing 56
Reopening DIARY.DOC 56
The Print Controls Menu 56
Boldfacing Text 57
Deleting a Print Control Symbol 58
Underlining Text 58
Turning Display On and Off 58
Inserting Page Breaks 59
Omitting Page Numbers 59
Resetting Page Offset 59
Saving the Document 60
Taking Advantage of Print Options 60
Comparing Printouts 61
What's Next? 61

Lesson 7 ■ More Features 63

Changing the Help Level 64
More Quick Commands 64
Shorthand (Keyboard Macros) 66
Column Blocks 72
Using the Calculator 73

Lesson 8 ■ Advanced Formatting 75

More Onscreen Format Commands 76
Footers and Headers 77
The Ruler Line 78
Automatic Indentation 80

Lesson 9 ■ Chain Printing and Nested Printing 83

What You'll Need 84
Chaining Files 84
Nesting Files 87
Review 89

Lesson 10 ■ Merge Printing 91

Creating a Mailing List 92
Creating a Master Document 95
Merge Printing 101
Creating Different Versions of a Form Letter 105

Reference

Reference Guide 115

A

Accent marks 115
Aligning a paragraph 116
Alternate type 117
ASCII 117
Auto indent 117

B

Background printing 118
Backspace key 118
Backup files 118
Bidirectional printing 119
Binding space 119
Blank lines 119
Block & Save Menu 119
Block math 120
Blocks 121
Boldface 124
Boxes 124

C

Calculator 124
Canceling a command 126
Caps Lock key 126
Carriage return 126
Case conversion 126
Centering text 127
Chaining files 127
Character width 127
Clearing the screen 128
Color 128
Column blocks 129
Columns 131
Command files 132
Comment lines 134
Control key 134
Copying 134
Creating a document or nondocument 135
Cursor 136
Cursor diamond 136
Cursor keys 136
Cursor movement and scrolling 138
Customizing WordStar 139
Custom print controls 140

D

Data files 141
Decimal tabs 143
Defaults 144
Delays 144
Delete key 144
Deleting text 145
Directories 146
Documents and nondocuments 147
Dot commands 148
Double strike 154

Drawing ____ 155

E

Editing ____ 157
Edit Menu ____ 157
Embedded ruler ____ 158
Enter key ____ 158
Erasing ____ 159
Error messages ____ 159
Exiting ____ 159
Extended character set ____ 159

F

Files ____ 160
File operations ____ 161
Finding and replacing ____ 162
Finding your place ____ 165
Flag column ____ 166
Footers and headers ____ 167
Formatting ____ 169
Form feeds ____ 169
Form letters ____ 169
Function keys ____ 170

H

Headers ____ 171
Help levels ____ 171
Help messages ____ 172
Hyphenation ____ 172

I

Incremental printers ____ 173
Indenting ____ 173
Indexing ____ 174
Inserting ____ 177
Installing WordStar ____ 177
Italics ____ 178

J

Justification ____ 178

K

Keyboard ____ 179

L

Layout ____ 180
Line feeds ____ 180
Line height ____ 180
Line spacing ____ 181
Lines ____ 182
Logged drive and directory 182

M

Margins ____ 183
Markers ____ 185
Math ____ 185
Maximum document size ____ 185
Memory usage ____ 186
Menus ____ 186
Merge printing ____ 187
Merge printing conditional commands ____ 195
Merge printing variable formatting ____ 201
Merge printing variable number formatting ____ 203
Messages while printing ____ 206
Microjustification ____ 207

N

Naming a file ____ 207
Near letter quality printing ____ 207
Nesting and chaining ____ 208
Nondocuments ____ 209

O

On/off commands ____ 209
Onscreen Format Menu ____ 209
Opening a file ____ 210
Opening Menu ____ 211
Overprinting ____ 211

P

Page breaks ____ 212
Page length ____ 213
Page numbers ____ 214
Paragraph margins ____ 215
Paths ____ 216
Pause printing ____ 216
Phantom space and rubout . 217
Pitch ____ 217
Place markers ____ 218
Previewing ____ 219
Print Controls Menu ____ 219
Printer drivers ____ 220
Printing a file ____ 222
Printing multiple copies ____ 225
Printing to disk ____ 225
Print options ____ 227
Prompts ____ 227
Proportional spacing ____ 228
Protecting a file ____ 229

Q

Quick Menu ____ 230

R

Reforming a paragraph ____ 231
Renaming a file ____ 231
Repeating ____ 231
Replacing ____ 231
Return key ____ 232
Ruler lines ____ 232
Running a DOS command _ 234

S

Saving a file ____ 235
Scrolling ____ 235
Sheet feeders ____ 236
Shorthand ____ 238
Soft spaces and carriage returns ____ 242
Spelling check ____ 242
Starting WordStar ____ 245
Status line ____ 246
Storing a file ____ 248
Strikeout ____ 248
Subscript and superscript __ 249

T

Tab key ____ 250
Table of contents ____ 250
Tab stops ____ 251
Temporary files ____ 252
Temporary indenting ____ 253
Toggles ____ 253

U

Underlining ____ 254
Undo and unerase ____ 254

V

Variables ____ 255

W

Word count ____ 255
Word wrap ____ 256

Appendices

Appendix A Error Messages 259

Appendix B WordStar Examples and Tips 277

Appendix C Customizing WordStar 305

Appendix D Files on Your WordStar Disks 323

Appendix E Making the Best Use of Directories and Memory 327

Appendix F ASCII Character Codes and Extended Character Set 335

Appendix G Command Summary 337

Index

Index 359

Welcome

Welcome to WordStar, the most respected name in word processing. If you're new to word processing, you're about to be introduced to a whole new world of word technology. If you're new to WordStar, you'll be amazed at the speed and versatility of this program. And if you're a WordStar user who's upgrading, you'll love the new features.

This section of the book contains all the information you need to install WordStar on your computer. Installation instructions begin on page xiii.

For WordStar Users Who Are Upgrading

If you don't want to go through the step-by-step installation instructions, just copy your original disks, then run WINSTALL. Be advised though that WINSTALL has been changed. (Hard disk users, copy your disks into a new directory called WS4.) Keep these important points in mind:

- WordStar comes with two installation programs, WINSTALL and WSCHANGE. WINSTALL provides for a basic installation of WordStar. WSCHANGE, a more detailed installation program, includes all of the WINSTALL options but also allows for extensive customization of WordStar.

- Your CONFIG.SYS file must have a FILES=20 statement. WINSTALL checks for this and will add the statement. Be sure to complete this step during installation and reboot at the end.
- Any personal dictionaries you have from a previous release of WordStar will work with this release. If you have a two floppy disk computer, copy your old personal dictionary over the new one. If you have a hard disk computer, be sure not to overwrite the old personal dictionary when you copy the new disks onto your hard disk.
- This version of WordStar comes with an extensive patching program, WSCHANGE. Any patches you made to previous releases of WordStar won't work with Release 4. See Appendix C, "Customizing WordStar."
- For two floppy disk systems, you can boot with your WordStar program disk by putting system tracks on your copy of that disk. But if you use 360K disks, you'll need to reduce the size of WSPRINT.OVR first. See the section, "Creating a Smaller WSPRINT.OVR File," in Appendix C, "Customizing WordStar," for instructions.
- To get the most out of WordStar on a two floppy disk computer, you might want to refer to the section on special program disk configurations. (See pp. xxvi-xxvii.)
- For hard disk users, WordStar is set up for a directory called \WS4. If you want a different directory name, you need to change the name in WSCHANGE. Also, it's important to remove the following WordStar 3.3 program files from every subdirectory on your hard disk. Keep a copy of these files on floppy disks.

WS.COM	WSMSGS.OVR	WSU.COM
WSOVLY1.OVR	WS.INS	CORRSTAR.OVR
MAILMRGE.OVR	WINSTALL.EXE	MM.INS
CINSTALL.EXE	MAIN.DCT	INTERNAL.DCT

- Function key assignments have been changed. You can reset them to the WordStar 3.3 settings in WSCHANGE.
- This version of WordStar has many new features and requires more disk space and more memory (minimum 256K RAM).
- Be sure to read *What's New* for new features and changes in WordStar.

First, Copy Your Disks

Before you install WordStar you need to copy your WordStar disks. Follow the instructions for your type of computer.

Note: The two Word Finder disks in your package require different copying and installation instructions than the WordStar disks. (Word Finder is a thesaurus program.) For now, put the Word Finder disks aside. When you're ready to copy and install these disks, turn to the Word Finder manual.

IF YOU HAVE A TWO FLOPPY DISK COMPUTER

Follow the copying instructions for the type of disks you'll be using—5¼", 3½", or high capacity.

5¼" Disks

You'll need

Your DOS disk
The disks in your package
The extra set of disk labels in your package
Four blank formatted disks (See "If You're New to Computers," pp. 2-11, if you need help with formatting.)

Follow these steps to copy your disks. Two floppy disk drives are usually labeled A and B. If yours are different, make the appropriate substitutions.

1 Turn on and boot your computer. (If you don't know how to boot your computer, see "If You're New to Computers.")

You'll see A> on your screen.

2 Remove the DOS disk from drive A and replace it with the WordStar Program disk. Put one of your blank formatted disks in drive B.

3 Type **copy a:*.*** **b:** and press ↵.

The copying is done when you see A> on your screen once again.

4 Remove both disks from the drives. Put the label "Program" on your newly created disk.

5 Put the Dictionary disk in drive A and a blank disk in drive B.

6 Type **copy a:*.*** **b:** and press ↵.

7 When the copying is done, remove both disks from the drives. Put the label "Dictionary" on your newly created disk.

8 Put the Installation disk in drive A and a blank disk in drive B.

9 Type **copy a:*.*** **b:** and press ↵.

10 When the copying is done, remove both disks from the drives. Put the label "Installation" on your newly created disk.

(You don't need to copy the Tutor disk.)

Use your copies of the WordStar disks. Store the originals in a safe place. You should have one extra blank disk which you'll use later.

Now, turn to "Installing WordStar" on p. xix.

3½" Disks

You'll need

Your DOS disk
The disks in your package
The extra set of disk labels in your package
Three blank formatted disks

TIP *You can create a WordStar program disk that will boot your computer. Format one disk with system tracks (/s), then follow the instructions below. (See "If You're New to Computers," pp. 2-11, if you need help with formatting or system tracks.)*

Follow these steps to copy your disks. Two floppy disk drives are usually labeled A and B. If yours are different, make the appropriate substitutions.

1 Turn on and boot your computer. (If you don't know how to boot your computer, see "If You're New to Computers.")

   You'll see A> on your screen.

2 Remove the DOS disk from drive A and replace it with the WordStar Program and Dictionary disk. Put one of your blank formatted disks (or the disk formatted with system tracks) in drive B.

3 Type **copy a:*.* b:** and press ↵.

4 Remove both disks from the drives. Put the label "Program and Dictionary" on the newly created disk.

5 Put the Installation and Tutor disk in drive A and a blank formatted disk in drive B.

6 Type **copy a:*.* b:** and press ↵.

7 Remove both disks from the drives. Put the label "Installation and Tutor" on the newly created disk. Use your copies of the WordStar disks. Store the originals in a safe place. You should have one extra blank disk, which you'll use later.

   Now, turn to "Installing WordStar" on p. xix.

High Capacity Disk (Floppy disk with more than 1 Mb of disk space)

If you have two high capacity disk drives

You'll need
Your DOS disk
The disks in your package
The extra set of disk labels in your package
Three blank formatted disks (high capacity)

If you have one high capacity disk drive

You'll need
Your DOS disk
The disks in your package
The extra set of disk labels in your package
One blank formatted high capacity disk
Two blank formatted low capacity disks

TIP *You can create a WordStar program disk that will boot your computer. Format a high capacity disk with system tracks (/s), then follow the instructions below. (See "If You're New to Computers," pp. 2-11, if you need help with formatting or adding system tracks.)*

Follow these steps to copy your disks. Two floppy disk drives are usually labeled A and B. The high capacity drive is usually labeled A on a computer with a single high capacity drive. If yours are different, make the appropriate substitutions.

1 Turn on and boot your computer. (If you don't know how to boot your computer, see "If You're New to Computers.")

You'll see A> on the screen.

2 Remove the DOS disk from drive A. Replace it with a high capacity blank formatted disk (or the disk formatted with system tracks).

3 Place the WordStar Program disk in drive B.

4 Type **copy b:*.* a:** and press ←┘.

5 When the copying is done, remove the Program disk from drive B. Leave the disk in drive A.

6 Put the Dictionary disk in drive B.

7 Type **copy b:*.* a:** and press ←┘.

8 When the copying is done, remove both disks from the drives. Put the label "Program" on your newly created disk.

9 Put the Installation disk in drive A and a blank formatted disk in drive B. If your system has only one high capacity drive, make sure you put a low capacity formatted disk in drive B.

10 Type **copy a:*.* b:** and press ↵.

11 Remove both disks and put the label "Installation" on your newly created disk.

You don't need to copy the Tutor Disk.

(If you want to copy Word Finder, the thesaurus, onto your high capacity program disk, see the Word Finder manual for copying and installation instructions.)

Use your copies of the WordStar disks. Store the originals in a safe place. You should have one extra blank disk, which you'll use later.

Now, turn to "Installing WordStar" on p. xix.

IF YOU HAVE A HARD DISK COMPUTER

The following instructions are for copying either 5¼" or 3½" disks. You'll need the disks that came in your package.

Usually, you'll have a floppy disk drive labeled A and a hard disk drive labeled C. If your disk drives are labeled differently, make the appropriate substitutions.

1 Turn on your computer.

You'll create a directory for WordStar. (If you would like more information about directories, see Appendix E, "Making the Best Use of Directories and Memory" or your DOS manual.)

2 At C>, type **md\ws4** and press ↵ to create a directory called WS4.

3 Type **cd\ws4** and press ↵ to log on to this new directory.

4 Put the Program disk in drive A. (If you have 3½" disks, your disk is labeled "Program and Dictionary.")

5 Type **copy a:*.*** and press ↵.

6 When the copying is finished and you see C> on your screen, remove the disk from drive A.

7 If you have 5¼" disks, repeat steps 4, 5, and 6 to copy the Installation and Dictionary disks onto your hard disk. (You don't need to copy the Tutor disk.)

   or

   If you have 3½" disks, repeat steps 4, 5, and 6 to copy the Installation and Tutor disk onto your hard disk.

(If you want to copy Word Finder, the thesaurus, onto your hard disk, see the Word Finder manual for copying and installation instructions.)

Now, turn to "Installing WordStar" on p. xix.

Note: WordStar is set up to run from the directory you just created, \WS4. If you want to put WordStar in a different directory, you must indicate the directory name in a program called WSCHANGE. See Appendix C, "Customizing WordStar."

Installing WordStar

You install WordStar so it will work with your computer, printer, and monitor. To install WordStar, you run a program called WINSTALL.

WordStar comes with two installation programs, WINSTALL and WSCHANGE. WINSTALL provides for a basic installation of WordStar. WSCHANGE, a more detailed installation program, includes all of the WINSTALL options but also allows for extensive customization of WordStar.

Starting WINSTALL

IF YOU HAVE A TWO FLOPPY DISK COMPUTER

1. Put your copy of the Program disk in drive A and the Installation disk in drive B.
2. Type **b:** and press ↵ to log on to drive B (B> will appear on your screen.)
3. Type **winstall a:ws** and press ↵.

   The Main Installation Menu is displayed on your screen.

Go to the next section, "Working Your Way Through WINSTALL," for step-by-step instructions.

IF YOU HAVE A HARD DISK COMPUTER

1. Make sure you're in your WordStar directory (WS4). If not, type **cd\ws4** and press ↵.
2. Type **winstall ws** and press ↵.

   The Main Installation Menu is displayed on your screen.

Go to the next section, "Working Your Way Through WINSTALL," for step-by-step instructions.

Working Your Way Through WINSTALL

The Main Installation Menu provides the major selections for the installation program. Each selection leads to another menu with more specific choices.

Use the following step-by-step instructions as your guide. Don't worry if you make a mistake. You can stop the installation at any time by pressing ^C (press the Ctrl key and the C key at the same time) and start over. Even after you've finished, you can go back and change your selections.

Installing Your Monitor

If you have a monochrome monitor that's 100% IBM compatible, you can skip this section and go to "Selecting Your Printer." WordStar is already set up to work with this type of monitor.

If you have a color monitor, an IBM EGA monitor, or a monitor that is not 100% IBM compatible, follow these steps:

1 Press **A** to display the Console Menu.

2 Press **A** to display the Monitor Selection Menu.

3 If you have a color monitor, or a monitor that is not 100% IBM compatible, press **B** to choose "ROM BIOS."

   If you have an IBM EGA monitor and want to display 43 screen lines, press **C**.

4 Press **X** to return to Console Menu.

   Notice that you can also select how you want underlined text displayed onscreen and if you want a soft space display character. To make these changes press the appropriate menu choice. If you're not sure what to do, skip this.

5 Press **X** to return to the Main Installation Menu.

Selecting Your Printer

Follow the steps below to select your printer. If you want to select more than one printer, turn to the section, "Selecting More Than One Printer," in Appendix C, "Customizing WordStar," for specific instructions.

1 Press **B** to see the Printer Selection Menu.

2 Find your printer on one of the menus. If your printer isn't on the first menu, press the number of a different menu.

   If your printer isn't listed on any of the menus, see the WordStar Printer Information brochure for suggestions on what printer to choose.

3 Press the letter next to your printer on the menu. The name of your printer will appear at the top of the screen.

4 Press **X** to return to the Main Installation Menu.

The printer you chose is the one WordStar will use automatically. (In computer lingo, this is called the default printer.) WordStar actually comes preinstalled for over 50 printers. At print time you can choose to use any of these printers.

Note: WordStar assumes the default printer you select is connected to your computer at the port called "LPT1." If your printer won't work with WordStar, try changing the port. See Appendix C, "Customizing WordStar," for instructions on changing the printer port.

If you want to use a printer with a sheet feeder, you need to indicate that in WSCHANGE when you're finished with this installation. See Appendix C, "Customizing WordStar," for instructions on using WSCHANGE. In WSCHANGE, follow the menu selections under "Printer" for "Select Sheet Feeder."

Naming Your Disk Drives

Now, you'll tell WordStar which disk drives your computer has and which one you'll run WordStar from.

1 Press **C** to see the Computer Menu.

2 Press **A** to choose your disk drives.

3 Press **Y** (for yes) to change the information.

4 Type the letter of the drive where your WordStar program files will be located. (On a two floppy disk computer, this is usually A, and on a hard disk computer, C.)

5 If the disk drive you just named is floppy, press **Y**. If it's hard, press **N**.

6 Type the letters of the remaining drive(s) on your computer and indicate if each is floppy or hard.

7 Press ↵ when you are done.

WINSTALL displays your selections.

8 At the prompt, "Do you want to change this? (Y/N)," press **N** if your drive selections are correct. You'll return to the Computer Menu.

If you need to change your drive selections, press **Y**. Then follow steps 4–8 above.

Checking the CONFIG.SYS File

The installation program needs to check a file called CONFIG.SYS. For WordStar to operate correctly, this file must have a FILES=20 statement. WINSTALL will check the file and then add the statement if necessary.

Follow these steps:

1 Press **C** to have WINSTALL check your CONFIG.SYS file.

2 Read the information on the screen. Press **Y** to respond to the prompt.

3 Follow the instructions on the screen. (If you have a two floppy disk computer, and have put system tracks on your Program disk, leave that disk in drive A. This is your boot disk. If you have a hard disk computer, your CONFIG.SYS file is on drive C.)

4 When WINSTALL is done checking the CONFIG.SYS file, press **X** to return to the Main Installation Menu.

Specifying the Location of the Dictionaries

WordStar needs to know the location of your spelling dictionaries. (These dictionaries are used when you check the spelling in a document.) Refer to the list below for the location of your dictionaries:

Type of Computer	*Location of Dictionaries*
Two floppy with 5¼" disks	Dictionary disk
Two floppy with 3½" disks	Program/Dictionary disk
Two floppy with a high capacity disk	Program disk
Hard disk	Hard disk

Follow these steps:

1 At the Main Installation Menu press **D**.

2 Read the menu and make the appropriate selection for your computer.

3 Press **X** to return to the Main Installation Menu.

Finishing the Installation

If you want to go back and change any of your selections, choose the category again from the Main Installation Menu. Otherwise, follow these steps to finish the installation:

1 Press **X**.

2 At the prompt "Are you through making changes? (Y/N)," press **Y**.

3 When you see A> or C> on the screen, reboot your computer in one of these ways:

   If you have a hard disk computer, when you see C> on your screen press **Ctrl, Alt,** and **Del** all at the same time.

   If you have a two floppy disk computer and have system tracks on your Program disk, when you see A> on your screen press **Ctrl, Alt,** and **Del** all at the same time.

   If you have a two floppy disk computer, when you see A> on your screen remove the Program disk from drive A and the Installation disk from drive B. Put your boot disk in drive A and press **Ctrl, Alt,** and **Del** all at the same time.

When you see the system prompt again on your screen, WordStar is installed and ready to use. Now, turn to "Starting WordStar" for instructions on starting the program.

Starting WordStar

Once you've installed WordStar, here's how to start the program every time you want to use it.

IF YOU HAVE A TWO FLOPPY DISK COMPUTER

1. Make sure your computer is on and booted. The A> should be on your screen. (If you booted with the DOS disk, remove the disk from drive A. If you booted with your WordStar Program disk, leave the disk in drive A.)
2. Put the Program disk in drive A and a blank formatted disk in drive B for your word processing.

   Always do your word processing on a disk in drive B. This time you're using a blank disk but you can also use disks that have files on them.
3. Type **b:** and press ↵.
4. Type **a:ws** and press ↵.

Read "A Few Important Notes" on the next page. Then you'll be ready to begin learning WordStar.

IF YOU HAVE A HARD DISK COMPUTER

1. Make sure your computer is on. You should see C> on your screen.
2. Type **cd\ws4** and press ↵ to log on to your WordStar directory.
3. Type **ws** and press ↵.

Read "A Few Important Notes" on the next page. Then you'll be ready to begin learning WordStar.

A Few Important Notes . . .

- Look at a program called README for late-breaking information about WordStar. Included is specific information about how your printer works with WordStar. At the prompt, A> or C:\WS4>, type **readme** and press ↵. (If you're using a two floppy disk computer, this program is on the Installation disk.)
- To see how your printer works with WordStar, you can print a file called PRINT.TST. (If you're using a two floppy disk computer, this file is on the Installation disk.)
- If you have a two floppy disk computer, always start your computer with the DOS disk (or Program disk with system tracks) you used during installation.

  You must use the same disk because a file called CONFIG.SYS was changed during installation. A FILES=20 statement was added. If you use other disks to boot your computer, the FILES=20 statement must be added to the CONFIG.SYS file on those disks.
- Be sure to send in your Registration Card to validate your warranty and receive current information about WordStar from MicroPro.
- The Customer Service booklet provides information about technical support, warranty replacements, and updates.
- Word Finder is a special thesaurus program that came with your package. Refer to the Word Finder manual for information on installing and using the program. (You need at least 320K of RAM to use Word Finder.)
- If you have a hard disk computer, and you want to start WordStar from any directory, you can add the \WS4 directory to your computer's path. See your DOS manual for information on changing your PATH statement. For more information on directories and paths, see Appendix E, "Making the Best Use of Directories and Memory."

Special Installation Options for Your Two Floppy Disk Computer

If you have a two floppy disk computer, you can customize WordStar so that the program works best for you. The way the disks are configured now, as you use WordStar you may have to swap disks to check spelling or use the thesaurus (Word Finder).

You can get around disk swapping by creating a special program disk. You may also want to include other program files on your WordStar program disk. You can also make good use of a large amount of memory.

Creating a Special Program Disk

The Program disk that came in your package contains the files people use most often. You can customize your program disk by eliminating files you won't need and adding those you'll use often.

Following is a step-by-step procedure for creating a special program disk. You should read the entire procedure first in order to determine what you want to do. Then go back to the beginning and follow the appropriate steps.

Start with a blank disk.

1. Format the disk. Format with system tracks if you want to be able to boot with your program disk.
2. Copy the following files onto the disk. (They're on the Program disk). Make sure the files are installed. Either copy them from an installed Program disk or go through the installation for this disk when you're finished.

   WS.EXE
   WSMSGS.OVR
   WSPRINT.OVR

   These three files are all you need to run WordStar.

3 You can create more disk space by reducing the size of WSPRINT.OVR. You can do this in WSCHANGE by extracting printer drivers. See Appendix C, "Customizing WordStar" for instructions.

Once you've reduced the size of WSPRINT.OVR, you've created a "bare bones" program disk. By checking the disk space, you'll know how much room you have to add other files.

4 Now you can add files based on what you think you'll need. Following are some suggestions of files to copy:

WSSHORT.OVR for the keyboard macro feature called "Shorthand."

WSINDEX.XCL for the indexing feature.

WSSPELL.OVR and **PERSONAL.DCT** for the spelling checker. If you have the disk space, also copy **MAIN.DCT** and **INTERNAL.DCT**. (You won't need to swap disks for a spelling check.) If you add these files, you need to run WSCHANGE to indicate the location of the main and personal dictionaries. See Appendix C, "Customizing WordStar" for instructions.

WF.EXE and **WFSM.SYN** or **WFBIG.SYS** to use the thesaurus. (These files are on the Word Finder disk.) You need 320K RAM to use Word Finder.

Other Programs WordStar lets you run separate programs and DOS commands even while you're editing. If you have programs you want to run, copy them onto your program disk.

If You Have 640K of RAM

If you have 640K of RAM you can take advantage of this large amount of memory and make checking spelling more convenient by eliminating disk swapping. Move PERSONAL.DCT onto your program disk. Then run WSCHANGE and make three changes. Give the new location of your personal dictionary (now on your program disk), have WordStar load the main dictionary into RAM, and change the main dictionary buffer to at least 280K bytes. See Appendix C, "Customizing WordStar" for instructions.

The first time you check spelling in an editing session, WordStar reads the main spelling dictionary into your computer's memory. Once this has been done, you don't have to swap disks again to check spelling during that session. If swapping disks wasn't necessary, a spelling check will be much faster since the dictionaries are in RAM instead of on disk.

Learning WordStar

Learning WordStar can be fun and easy. In this part of the book, you'll find the following tools to help you learn.

If You're New to Computers This provides basic information about computers and word processing for beginners. It also covers some DOS functions like formatting disks and booting. If you're a beginner, this is a good place to start.

The Keyboard Overlay Your WordStar package came with a keyboard overlay that can help you while you learn and use WordStar. These pages explain this handy tool.

Using the Onscreen Tutorial Your package also includes an onscreen tutorial to teach you about WordStar. The tutorial is fun to use and gives you a great overview of the program.

The Training Guide The Training Guide provides ten lessons to teach you WordStar. The first six teach you the basics; the last four offer lessons in more advanced tasks. With the Training Guide you can learn at your own pace and spend time working with the program as you learn.

If You're New to Computers . . .

You've come to the right place. The next few pages tell you something about word processing and give you some background information about your computer.

What Is Word Processing, Anyway?

Word processing is a computer-age term for typing and editing any kind of text—letters, memos, articles, reports, even books. Word processing involves typing into a computer, but it's more than just typing. Although the computer keyboard looks a lot like a typewriter keyboard, it has special keys that a typewriter doesn't have.

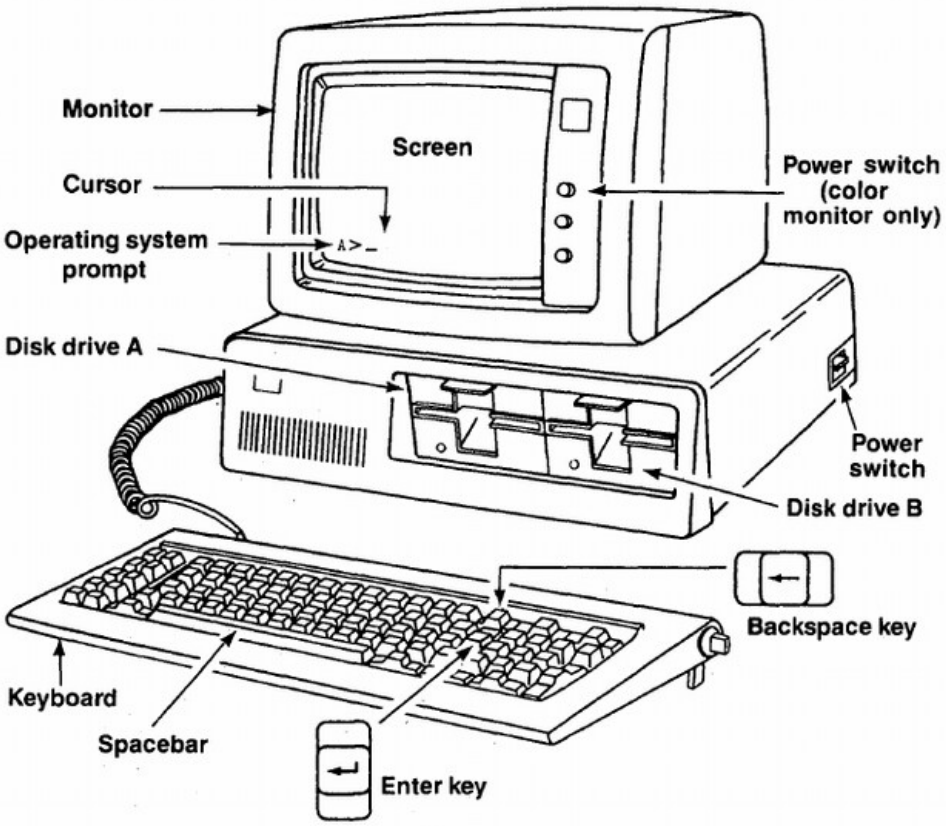
With a typewriter, you see words on paper as you type. When you use a word processor, you see words on the computer screen as you type. As you read your text on the screen, you can change it or rearrange it—and when it looks just the way you want, you print a paper copy on your computer printer.

You can save text typed with a word processor and use it again later. Your text is saved electronically in a **file** on your disk. When you want to work with a file again, you simply ask for it by name. You can then make any changes you wish, and print the new version.

About Your Computer

Before you install WordStar, you need to know about the parts of your computer (**hardware**) and the programs that make it run (**software**). See the diagram that follows.

Basic Computer Parts



The Operating System

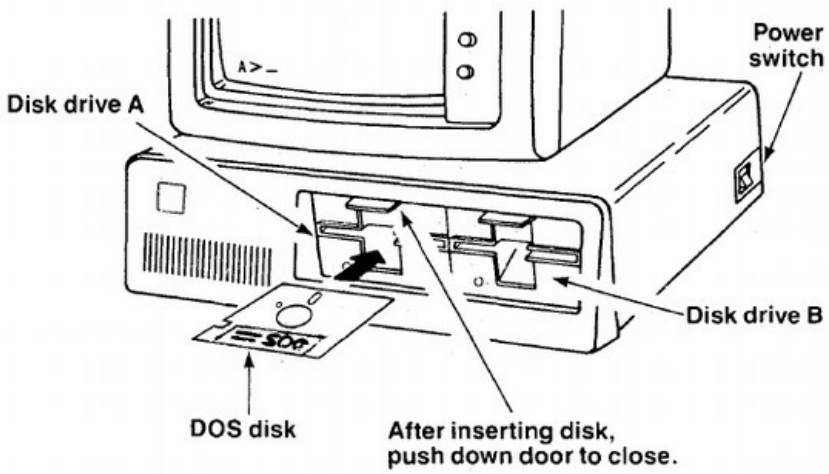
The operating system consists of software programs that give your computer the instructions it needs to operate. The operating system is sometimes referred to as **DOS**—for **D**isk **O**perating **S**ystem.

The programs (such as COMMAND.COM) that make up the operating system are contained on a disk. If you have a two floppy disk computer, you'll use the operating system disk each time you turn on the computer. This disk is called the DOS disk, system disk, or boot disk. (If you have a hard disk computer, the DOS programs are usually located on the hard disk.)

How to Start the Computer

In computer lingo, starting the computer is called **booting** the computer.

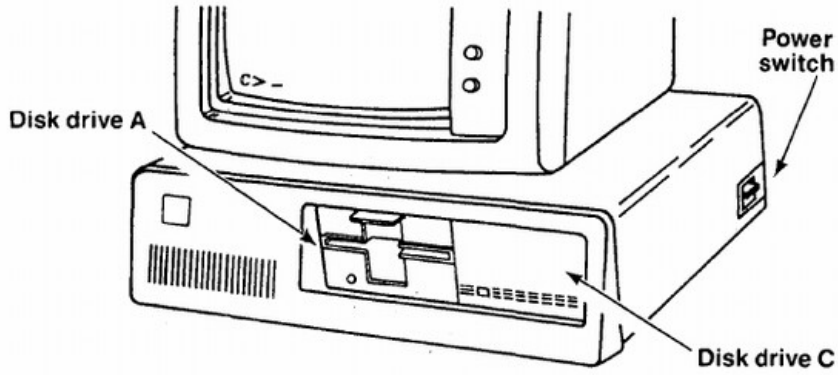
To start a two floppy disk computer, check your computer manual for the procedure to start your computer. With some computers, you first insert the operating system disk (DOS) and then turn on the power switch. With others, you first turn on the power switch and then insert the disk. Either way, take your DOS disk out of the envelope and insert it in drive A. Close the door. Some monitors also have a power switch. If yours does, turn it on.



After you've turned on the computer and inserted the DOS disk, you'll hear a beep. You may be asked to type the date and time (you can press the **Enter** key, ↵, twice to skip these). When you see **A>** (the operating system prompt) on the screen, your computer is ready to use—it's *booted.*

> ***TIP*** *Before you turn your computer off, make sure you see the operating system prompt on the screen. Then remove your disks and turn off the power switch on the computer (and monitor, if applicable).*

To start a hard disk computer, simply turn the power switch on. The DOS programs are stored on the hard disk. Leave the drive A door open. Some monitors also have a power switch. If yours does, turn it on.



Wait until you hear a beep. You may be asked to type the date and time (you can press the **Enter** key (↵) twice to skip these). When you see C> (the operating system prompt) on the screen, your computer is ready to use—it's *booted.*

> ***TIP*** *Before you turn your computer off, make sure you see the operating system prompt on the screen. If you have a floppy disk in drive A, remove it. Then turn off the power switch on the computer (and monitor, if applicable).*

What is the Cursor?

The cursor is a blinking rectangle (■) or dash (_) on your screen. When you first turn on your computer, the cursor appears right after the A> or C>. The cursor marks your place on the screen. It lets you know where you are—whatever you type next will appear right where the cursor is.

"Pressing" a Key

When you read instructions that tell you to "press" a key, push down the key once and let it go. (If you hold the key down, you will get thisssssssssss. Then you have to use the **Backspace** key to erase all the extra letters.)

How to Format a Floppy Disk

Floppy disks must be **formatted** before you can use them. Formatting a disk prepares it to receive information. You can format a new disk or reformat a used disk. Formatting a used disk erases any information on it.

TIP *Your operating system manual has more detailed information on formatting disks.*

FOR TWO FLOPPY DISK COMPUTER USERS ONLY

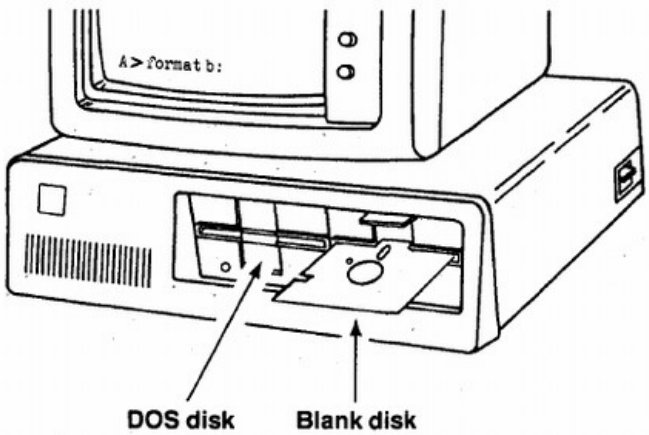
1. Turn on and "boot" your computer.
2. When you see **A>** on the screen, type **format b:** (or type **format b:/s** to make this a boot disk) and press ↵. (Be sure to put a space before the "b:".)

   TIP *If you specify "/s," certain DOS files are copied onto the disk as it is formatted. You can then use this disk as a "boot" disk.*

3. You will see a message like this: **Insert new diskette for drive B and strike any key when ready.**

   Or like this: **Insert new diskette for drive B and press the Enter key when ready.**

4. Take a blank disk out of its envelope, insert it in drive B, and close the door. Press ↵.



5 You'll see a message on the screen when the disk has been formatted. You'll also be asked if you want to format another disk. If you do, answer **Y** (for Yes); if not, answer **N** (for No). Then press ↵.

6 Remove the formatted disk from drive B. Put it back in its envelope until you need it.

7 Repeat the procedure until you've formatted as many disks as you need.

FOR HARD DISK COMPUTER USERS ONLY

Important The following instructions tell you how to format a *floppy* disk if you have a computer with one hard disk (drive C) and one floppy disk (drive A). Don't format the hard disk (C). If you do, you'll erase all the information on your hard disk.

---

1 Turn on and "boot" your computer.

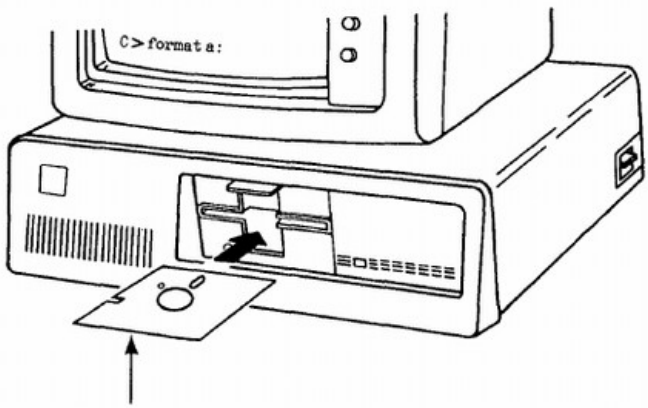
2 When you see **C>** on the screen, type **format a:** and press ↵. (Be sure to include the "a:".)

3 You will see a message like this: **Insert new diskette for drive A and strike any key when ready.**

Or like this: **Insert new diskette for drive A and press the Enter key when ready.**

4 Take a blank disk out of its envelope, insert it in drive A, and close the door. Press ↵.

(continued)



5 You'll see a message on the screen when the disk has been formatted. You'll also be asked if you want to format another disk. If you do, answer **Y** (for Yes); if not, answer **N** (for No). Then press ↵.

6 Remove the formatted disk from drive A. Put it back in its envelope until you need it.

7 Repeat the procedure until you've formatted as many disks as you need.

How to Copy a Floppy Disk with DISKCOPY

When you buy any software package, such as WordStar, you should always make a copy of each disk. Use the copies for your work and store the original disks in a safe place.

To copy the contents of a floppy disk onto another floppy disk, use the DOS command DISKCOPY. DISKCOPY automatically formats the floppy disk as it copies the information onto it.

> ***TIP*** *Your operating system manual has more information on the DISKCOPY command.*

FOR TWO FLOPPY DISK COMPUTER USERS ONLY

1. Turn on and "boot" your computer. Leave the DOS disk in drive A.
2. At the system prompt (**A>**), type **diskcopy a: b:** and press ↵. (Be sure to put a space before and after the "a:".)
3. You will see a message like this: **Insert SOURCE diskette in drive A. Insert TARGET diskette in drive B. Press any key when ready.**
4. Remove the DOS disk from drive A and put the *original* disk in drive A.

   TIP *The "source" disk is the one you are copying from.*

5. Put a blank disk (it doesn't need to be formatted) in drive B. Press any key.

   TIP *The "target" disk is the one you are copying to.*

6. When the disk has been copied, you'll be asked if you want to copy another disk. If you do, answer **Y** (for Yes); if not, answer **N** (for No).
7. Remove the disks from both drives. Label the copy appropriately. Put both disks back in their envelopes until you need them.
8. Repeat the procedure until you've copied as many disks as you need.

FOR HARD DISK COMPUTER USERS ONLY

1. Turn on and "boot" your computer.
2. When you see **C>** on the screen, type **diskcopy a: b:** and press ↵. (Be sure to put a space before and after the "a:".)
3. You will see a message like this: **Insert SOURCE diskette in drive A. Press any key when ready.**
4. Put the *original* disk in drive A. Press any key.

   TIP *The "source" disk is the one you are copying from.*

5 Wait a few moments until you see a message like this: **Insert TARGET diskette in drive A. Press any key when ready.**

6 Remove the original disk from drive A and insert a blank disk (it doesn't need to be formatted) in drive A. Press any key.

TIP *The "target" disk is the one you are copying to.*

7 You may be asked to insert the source and target disks more than once to complete the copy procedure. When the disk has been copied, you'll be asked if you want to copy another disk. If you do, answer **Y** (for Yes); if not, answer **N** (for No).

8 Remove the disk from drive A and label it appropriately. Put it back in its envelope until you need it.

9 Repeat the procedure until you've copied as many disks as you need.

Tips for Handling and Storing Floppy Disks

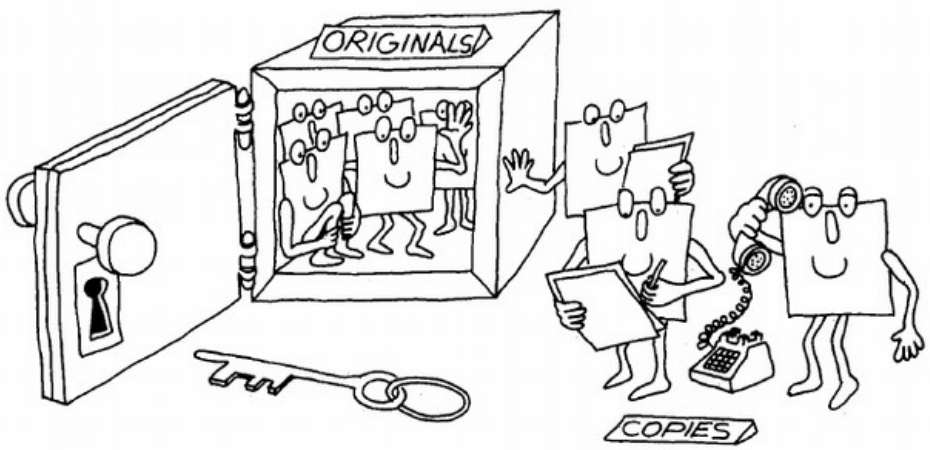
When you're not using a disk, always keep it in its envelope. Store disks in a case or box especially made for that purpose, or in another place away from extreme heat, cold, sunlight, dampness, and so on.

Try not to handle disks excessively when they're out of their envelopes. Be especially careful not to touch the exposed area in the middle and the oval slot below it. Dust and fingerprints can damage your disks.

Don't bend disks or force them into the disk drive, and don't stack things on top of them.

Keep disks away from magnets. Magnetic fields (including those from a ringing telephone) can destroy the contents of disks. Don't use paper clips or other metal clips on disks.

When you're putting a label on a disk, it's best to write out the label first, and then place it on the disk. If you do write on the label after it's already on the disk, be sure the disk is in its envelope and be sure to write with a felt tip pen. Don't use an eraser on a disk label because eraser crumbs can harm the disk.



Whether you're using a two floppy or a hard disk computer, it's a good idea to make an extra floppy disk copy of all your disks for safekeeping. If a disk ever becomes worn out or damaged, you'll be able to make a new copy if you have an extra stored away. Refer to your operating system manual for instructions on copying disks.

The Keyboard Overlay

The keyboard overlay can be helpful as you learn and use WordStar. Choose the keyboard overlay that matches your computer keyboard and place it across the top of your keyboard.

As you learn WordStar, you'll become familiar with the program's commands. Most of the commands are combinations of letter keys. The function keys, F1 through F10, are set up to give every major command as well. As you become proficient, you may want to take advantage of the convenience of function keys.

Each function key has four commands assigned to it—one issued by pressing the key and the other three by pressing the key with the **Shift**, **Alt**, or **Ctrl** key. The keyboard overlay shows the commands assigned to each function key and the commands for the arrow keys on the numeric keypad at the right-hand side of the keyboard.

You can change all 40 function key assignments. See Appendix C, "Customizing WordStar," for information on how to change the function keys. (You can write in your changes on the back of the keyboard overlay.)

Using the Onscreen Tutorial

The Tutor Disk contains an onscreen tutorial to help you learn about WordStar. The tutorial is fun to use and provides you with an overview of the program.

To use the onscreen tutorial, follow these steps:

1. Turn on and boot your computer.
2. Put the Tutor disk in drive A. (Hard disk users need to log on to drive A.)
3. Type **teachme wordstar** and press ↵.

   A menu of lessons is displayed. You can go through all the lessons in order or select them randomly. Once you've started a lesson, you can skip topics. You can repeat the lessons as often as you like.

Note: On some monochrome monitors the lessons may appear distorted. If you have this problem, press **Esc** to stop the tutorial. If you're using a two floppy disk computer, remove the Tutor disk from drive A and replace it with your DOS disk. If you have a hard disk computer, log on to the directory containing your DOS files. Type **mode bw80**. Then start again at step 2 above.

> ***CAUTION*** *Make sure you have no RAM-resident programs (like SideKick) active while you are running the tutorial. Otherwise, you may be unintentionally returned to the operating system prompt.*

Training Guide

Learning WordStar can be easy and fun! Following are 10 lessons to teach you WordStar. Each lesson gives useful information about WordStar and lets you practice using the program with step-by-step instructions. The lessons are written so you can review specific tasks individually later without having to go through the entire lesson again.

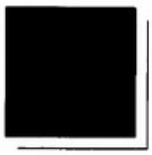
Lessons 1–6 teach you everything you need to know to start working with WordStar. The lessons are

Lesson 1–Learning the Basics
Lesson 2–Editing
Lesson 3–Formatting Your Document
Lesson 4–Working with Blocks of Text
Lesson 5–Finding Words and Checking Spelling
Lesson 6–Printing

Lessons 7–10 teach more advanced tasks. You may want to master what you learn in the first six lessons, then go through the rest of the training later. The lessons are

Lesson 7–More Features
Lesson 8–Advanced Formatting
Lesson 9–Chain Printing and Nested Printing
Lesson 10–Merge Printing

Now, you can start learning WordStar by turning to Lesson 1.



Lesson 1

Learning the Basics

In this lesson you'll learn about

Starting WordStar
The Opening Menu
Getting Onscreen Help
Creating a File
Typing Text
Saving a File
Printing

In word processing, you'll usually follow the same steps each time you write or edit. In Lesson 1, you'll learn and master the basic steps. Then you'll be ready to learn more specific tasks you can do.

Getting Ready

If you have a hard disk computer, you can go on to "Starting WordStar."

Floppy disk computer users need to set up a work disk for training. To do that, you need a blank, formatted disk. If you need to format a disk, do that now, then return here. If you don't know how to format, you'll find instructions for formatting disks in "If You're New to Computers."

Follow these steps to set up your Training Work Disk:

1 Make sure your computer is on and the system prompt A> appears on your screen.

2 Place your copy of the WordStar Program Disk in drive A.

3 Place a blank, formatted disk in drive B.

4 Type **copy *.doc b:** and press ↵.

The training files you'll need are copied onto the disk in drive B.

5 When you see the message "10 files copied" and the system prompt A> on your screen, remove the disk from drive B. Label the disk "Training Work Disk."

6 Remove the WordStar Program Disk from drive A.

Now that you've prepared your Training Work Disk, you're ready to begin.

Starting WordStar

IF YOU HAVE A TWO FLOPPY DISK COMPUTER

You'll need the copy of the WordStar Program Disk you created during installation and your Training Work Disk.

To start WordStar, follow these steps:

1 Place the WordStar Program Disk in drive A.

2 Place the Training Work Disk in drive B.

3 Type **b:** and press ↵.

4 At the B> prompt, type **a:ws** and press ↵.

Always do your word processing on a work disk in drive B. The Program Disk in drive A runs the program, and it's a good idea never to put anything else on it.

IF YOU HAVE A HARD DISK COMPUTER

1 Make sure you're in the directory that contains the WordStar program. If you're not, type **cd\ws4** and press ↵.

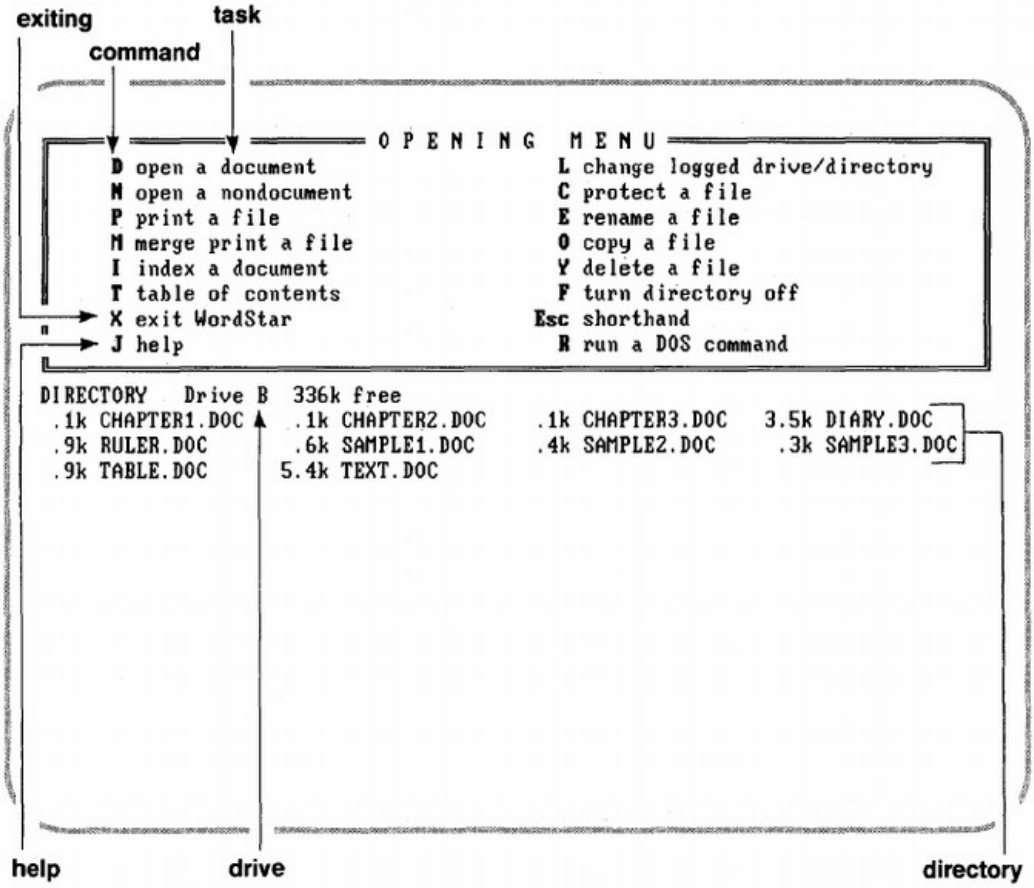
2 Type **ws** and press ↵.

The Opening Menu

The Opening Menu gives you a list of tasks you can do. Each task is assigned a letter that represents a command. You decide what you want to do and press the appropriate command.

As you work with WordStar you'll notice the menus and the choice of commands change depending on what task you're performing. No matter what you're doing, there's always a menu of commands at the top of your screen. Menus are helpful when you're learning. Later, when you're more proficient with WordStar, you can choose not to display them and have more room on your screen.

Now, look at the Opening Menu.



The directory display lists the files on your current disk. If you have a hard disk computer, you probably have many files listed on your screen. If you have a floppy disk computer, you'll see the training files you copied onto your Training Work Disk displayed on the screen.

Getting Onscreen Help

As you're learning and using WordStar, remember that onscreen help is always available. You get help by pressing **J** followed by the letter for the command you want help with.

Note: Command letters are written in uppercase on the screen. When you choose a command, you can type either an upper- or lowercase letter.

While the Opening Menu is on your screen, practice getting help for a few commands. Follow these steps:

1 Press **J**. (Remember, you don't have to type an uppercase letter.) Read the message.

2 Press **D** to get help on that command.

3 Read the information.

4 Press **Esc**.

Practice displaying help for a few other commands on the Opening Menu.

Creating a File

In word processing, documents you type are kept on a disk in a file. Each time you write a document, a memo or letter, for example, you give it a name, or filename. The computer stores and retrieves a document according to the filename.

A filename can contain from one to eight characters, including letters and numbers. It's good practice to use filenames that will remind you of the contents of your document. For example, you might call a letter to your mother "momlett."

In addition to the eight-character name, you can also add a file extension—a period followed by three more characters. For example, for the letter to your mother you can add a date reminder and call the file "momlett.feb."

Using file extensions can help you remember the contents of your files, as in the following examples:

Type of document	**Filename**
A letter to your mother in March	momlett.mar
A memo to Mary on November 2	mary1102.mem
A memo to John on January 15	john0115.mem
A monthly status report for April	April.sta

Now, follow these steps to create a file:

1 Press **D** to open a document.

2 At the prompt "Document to open?," type **first.doc** and press ↵.

3 At the prompt "Can't find that file. Create a new one (Y/N)?," press **Y**.

Typing Text

Now you've created a file called FIRST.DOC and you're ready to type. First, look at the Edit Menu to familiarize yourself with the editing commands. You'll learn more about specific editing commands in Lesson 2.

The symbol ^ stands for the **Ctrl** key. When when you see a **^G** command, for example, you press the **Ctrl** key and the letter **G** at the same time.

Type the following letter, pressing the **Enter** key whenever you see this symbol ↵. Don't worry when you come to the end of a line; WordStar automatically "wraps" what you're typing to the next line. Pressing ↵ acts like the Return key on a typewriter. If you press ↵ by mistake, use the **Backspace** key (←) to get the cursor back in the right position.

If you make typing errors, just leave them. You can correct them later when you learn editing in Lesson 2. If you make a lot of mistakes and want to start over, press **^KQ**. Type **Y** to answer yes to the prompt. Then you'll be back at the Opening Menu and you can start over at step 1 above.

Now, type the letter.

```
July 7, 1987↵
↵
Gulliver's Travel Service↵
152 Lilliput Street↵
San Francisco, CA 94118↵
↵
Dear Mr. Gulliver,↵
↵
I saw your recent advertisement in the newspaper and I am
interested in the European tour package you are offering this
month. My wife and I are interested in seeing all of the
countries you've listed, but we were wondering if we can
add Yugoslavia and Greece to the trip.↵
↵
With the kids all off to college now, we are ready for this trip.
Could you please send me more information about the European
Tour. Thank you.↵
↵
Sincerely, ↵
```

Saving a File

When you finish working in a file, you tell the computer to save and store your document. Once a document is saved, you can go back to it any time to edit or read it.

Save the file FIRST.DOC.

1 Press **^KD**.

You should be back at the Opening Menu with the file FIRST.DOC now listed in the directory display below the menu. (If you're not at the Opening Menu, you might have pressed the wrong keys. To get to the Opening Menu, press **^U**, then **^KD**.)

Printing

If your printer is set up, you might want to see your letter on paper. If you don't have a printer, skip this section.

Print the file FIRST.DOC.

1 Press **P** (Print a file).

2 At the prompt "Document to print?," type **first.doc.**

3 Press **Esc** to skip the printing questions.

Your first document prints!

Reviewing the Basics

You've covered the basics of word processing in a few short steps. For most word processing jobs, you follow these steps:

1 Start the program.

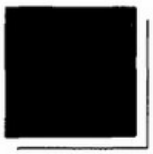
2 Create a file.

3 Type your text.

4 Save the file.

5 Print.

What could be easier! Now, move on to the next lesson, where you'll learn about editing with WordStar. (If you want to stop here and start the lessons again later, press **X** to exit WordStar.)



Lesson 2

Editing

In this lesson you'll learn about

- The Editing Screen
- Moving Around in Your Document
- Erasing and Inserting
- Correcting with Overtype
- Aligning Paragraphs

You've learned the basics — creating a file, typing text, saving a file, printing. But the real power of word processing begins with editing. With the WordStar editing commands, you can correct typos, change wording, insert words and sentences, and more.

To practice editing, you'll work with the file you created in Lesson 1, FIRST.DOC. If you're continuing from Lesson 1, you should be at the Opening Menu. If you're starting over with this lesson, start WordStar.

Opening a File

In Lesson 1 you learned how to create a file. Now you'll go back to the letter you wrote and edit some of the text.

To open the file FIRST.DOC, follow these steps:

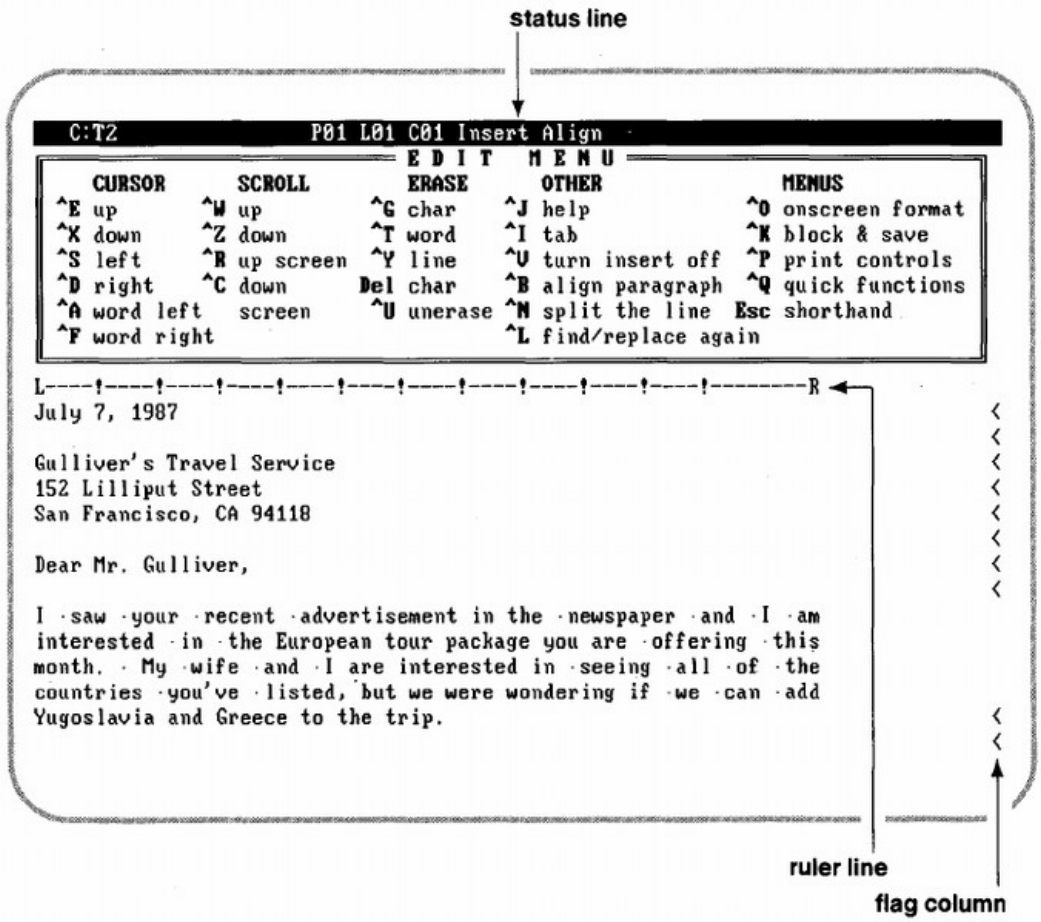
1 Press **D** (open a file).

2 At the prompt "Document to open?," type **first.doc** and press ↵.

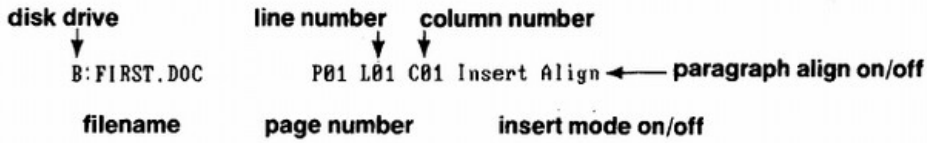
Here's the letter you wrote in Lesson 1 ready for revisions!

The Editing Screen

Every time you open a document, the Edit Menu will be at the top of the screen. Other parts of the screen provide useful information.



The **status line** contains the following information:



Press the cursor down key (look for the keys with arrows on the numeric keypad at right side of your keyboard) a few times and watch the line number change. Do the same with the cursor right key and watch the column number change. (If you end up typing numbers instead of moving the cursor, press the **Num Lock** key and try again.)

The **ruler line** shows left and right margins and tab stops (the exclamation marks). The line is 65 spaces long, and the tabs are set every 5 spaces, at 6, 11, 16, 21, etc. You'll learn more about the ruler line in Lesson 3.

The **flag column** contains characters, or flags, that WordStar displays to give you information about what's going on in your document. For example, < means you ended the line by pressing ↵, P indicates the end of the page, and ^ shows the end of the file. For a complete explanation of all the flag characters, see **Flag column** in the "Reference Guide."

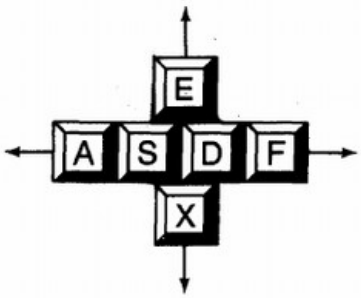
Moving Around in Your Document

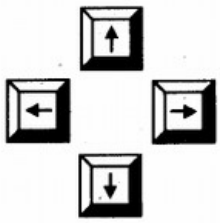
Learning to move the cursor around is a vital part of word processing training. You need to know how to get around your document quickly in order to fix and change text. If you already know how to move the cursor and scroll with cursor control commands, then you can skip the next two sections and move on to "Erasing and Inserting."

Moving the Cursor

You can move the cursor with the cursor keys (the numeric keys marked with the arrows) or you can move the cursor with control commands (letter keys used with the **Ctrl** key). You've already practiced using the cursor keys.

Look at the Edit Menu for the commands listed under CURSOR. Locate those keys on your keyboard. Because of their position on the keyboard, these keys are called the "cursor diamond."





To Move the Cursor	Press
up one line	↑ or ^E
down one line	↓ or ^X
left one character	← or ^S
right one character	→ or ^D
left one word	^← or ^A
right one word	^→ or ^F

Practice moving the cursor around. Remember, you press the **Ctrl** key and the letter key at the same time. (If you happen to hit the wrong key while you're moving around and something happens to your document, press **^U**. If you accidentally add extra letters to your document, just leave them. You'll learn how to delete later in this lesson.)

When you're finished, move the cursor to line 1, column 1 of your document. Remember to use the status line to help you with the location of the cursor.

Scrolling

Scrolling commands allow you to make much bigger moves in your document. With scrolling, the cursor stays in one spot and the screen moves. Look at the commands listed under SCROLL on the Edit Menu and then locate the command keys on your keyboard. Notice that these keys belong to a larger cursor diamond.

> ***TIP*** *For touch typists especially, control commands are handy. You can press* ***Ctrl*** *with your little finger and the letter key with the other fingers of your left hand. As you're typing quickly, you never need to lift your hands off the keyboard to scroll or move the cursor around.*

Try a few scrolling moves. You should be at line 1, column 1.

1 Press ^**Z** a few times. Notice that the cursor is stationary and the screen moves up.

2 Press ^**W** until the first line of the document is showing on the screen again.

3 Press ^C to scroll down a full screen. Notice how quickly the second part of your letter appeared on the screen.

4 Press ^**R** to scroll up a full screen.

You can also scroll using the following equivalent keys on the numeric keypad:

^R	PgUp
^C	PgDn
^W	^ PgUp
^Z	^ PgDn

Which keys you use becomes a matter of personal preference.

Erasing and Inserting

The ability to quickly fix typos and change wording in a document is one of the great features of word processing. The commands for erasing are listed under ERASE on the Edit Menu. Soon, you'll know these commands by heart and won't need to refer to the menu.

You'll practice erasing and inserting by editing FIRST.DOC. Unless you've made some typos in your letter, this document looks okay. But we'll work our way through the letter, making a few changes as we go. Later, if you have your own typos to fix, go ahead and fix them. You want your first document to be perfect!

First, we'll practice erasing a single character with ^**G**, erasing a word with ^**T**, and erasing an entire line with ^**Y**.

Erasing a Character

1 Press ^**X** to move the cursor down to line 10.

2 Press ^**F** four times so the cursor is under the "t" in the word "tour."

This letter should be capitalized!

3 Press ^G and the "t" disappears. Notice how the text shifted to take up the space of the missing letter.

4 Type T.

Did you press ^T by accident? If you did, the entire word "tour" disappeared. To fix, press ^U, unerase. Now try again.

Erasing a Word

You've changed your mind about the extra countries you want to visit.

1 Press ^A four times. (You're now on line 10, column 1.)

2 Press ^X three times.

3 With the cursor under the "Y" in "Yugoslavia," press ^T.

4 Type **Italy** and press the **Spacebar** once.

5 Try the whole process again and change Greece to Austria.

Erasing a Line

1 Press ^A three times to move the cursor left.

2 Press ^X twice to move the cursor down to the sentence that begins "With the kids."

This sentence isn't appropriate for a business letter.

3 Press ^Y and the sentence is gone. Notice how the text shifted up to take up the space left by the sentence you erased.

Using Unerase

WordStar has a handy command that will save you time and frustration if you erase something by accident or if you change your mind. The command ^U unerase, will bring back the most recently removed text.

You just erased a line with ^Y. With the cursor at line 15, column 1, press ^U and watch the line return to your document. You can also use ^U to cancel a command.

Correcting with Overtype

In the exercises above, you erased text and WordStar inserted the replacement text. You really have two ways (or "modes" in computer lingo) to correct text in WordStar — by inserting characters or words or by typing directly over existing text. You choose this "mode," that is turn it on or off, with the **Insert (Ins)** key.

Look at the status line. Press the **Ins** key and watch what happens. Until this point, you've had Insert on as shown by the word "Insert" in your status line. You just turned Insert off and the word disappeared. Press it again and Insert mode is back on.

Another way to turn Insert on and off is with a WordStar control command, **^V**. (You'll find this command listed under OTHER on the Edit Menu.) Try pressing **^V** a few times, this time watching the menu. So you have two ways of turning Insert on and off and two places to see if Insert is on or off.

Correct some text with overtype.

1 Press the **Ins** key to turn Insert off. (Watch your status line to make sure it's off.)

2 Make sure the cursor is at line 15, column 1, under the "W" in "With."

   Let's remove this sentence again, this time by typing over the unwanted text. Type **We want to begin making travel plans soon.**

3 Press **Ins** to turn Insert mode back on.

Now, you've still got some extra text that you need to erase.

Erasing with the Del and Backspace Keys

The **Del** and **Backspace** (←) keys also have erase functions. **Del** erases the character at the cursor and **Backspace** erases the character to the left of the cursor.

You still need to clean up your document.

1 Press **Del** until all the extra text you don't need on line 15 is erased.

Don't worry about the hole in your paragraph. You'll learn to fix that next.

Aligning Paragraphs

If you make a lot of changes in a document, it may end up out of alignment, just like the last paragraph of the letter that's on your screen now. You'll use the command ^**B** to realign your edited documents.

Realign the last paragraph in FIRST.DOC.

1 Move the cursor to the beginning of the paragraph, line 15, column 1.

2 Press ^**B**.

The paragraph lines up correctly.

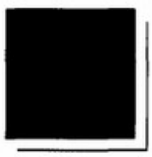
When you're making a lot of changes in a document, you'll need to use ^**B** often. Just remember that you must position the cursor anywhere on the first line of the paragraph and that ^**B** realigns only by paragraph.

Saving Your File—Backup Files

Press ^**KD** to save and exit the file FIRST.DOC. Once you're at the Opening Menu again, look at the directory. You'll notice a new file in the directory listing called FIRST.BAK. Once you've edited and saved a file, WordStar automatically creates a backup version of that file. Backup files always have the extension .BAK. You can't edit backup files, but you use them to restore files that have been lost or erased. See the "Reference Guide" for more information about .BAK files.

If you want to print FIRST.DOC, press **P** and follow the prompts.

Next, in Lesson 3, you'll learn about document layout. (If you want to stop here and start the lessons again later, press **X** to exit WordStar. Begin the training again at Lesson 3.)



Lesson 3

Formatting Your Document

In this lesson, you'll format a document. You'll cover these subjects:

Onscreen Format Menu
Centering Text
Ruler Lines
Clearing Tabs
Setting Tabs
Typing Columns
Dot Commands
Setting Margins
Setting Ragged Right Margins

So far, you've learned to create and save a document, move the cursor, and use the WordStar menus and screens to type and edit a letter. In this lesson, you'll learn another important element—how to format a document as you type. The format determines how the document will look when it prints.

In this lesson, you'll type an itinerary. An itinerary requires a special page design. You'll center text, set tabs and margins, and change the alignment of right margins from justified to ragged right.

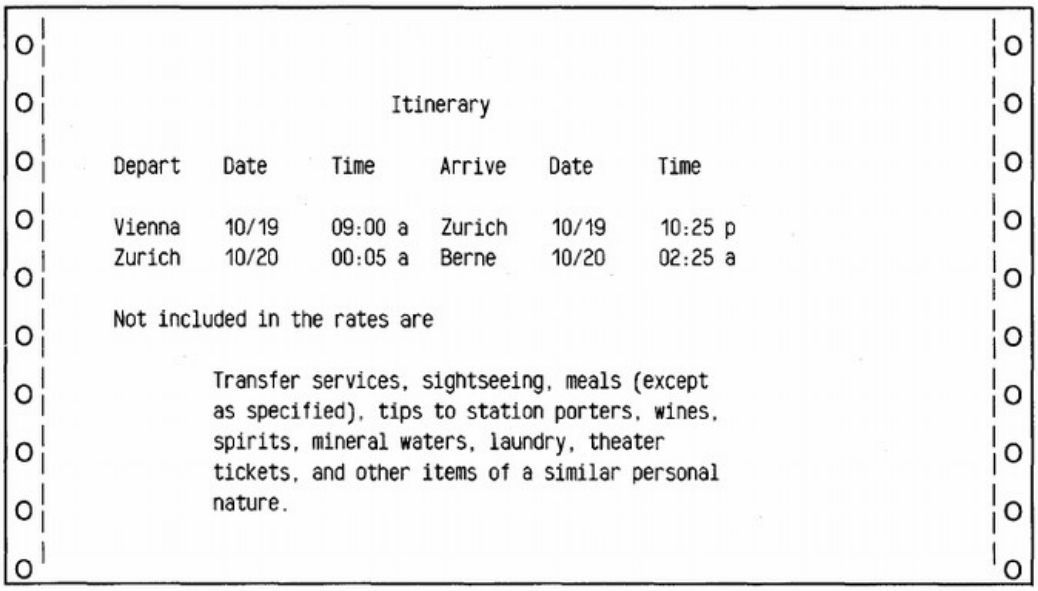
Starting Up

You'll begin by starting WordStar and choosing a filename for a new document, an itinerary. Remember that a filename should describe the document's contents.

1 Unless you are continuing from Lesson 2, start up WordStar.

2 Open a new document called TRIP.DOC.

TRIP.DOC will look like this when it's printed.



Itinerary

Depart	Date	Time	Arrive	Date	Time
Vienna	10/19	09:00 a	Zurich	10/19	10:25 p
Zurich	10/20	00:05 a	Berne	10/20	02:25 a

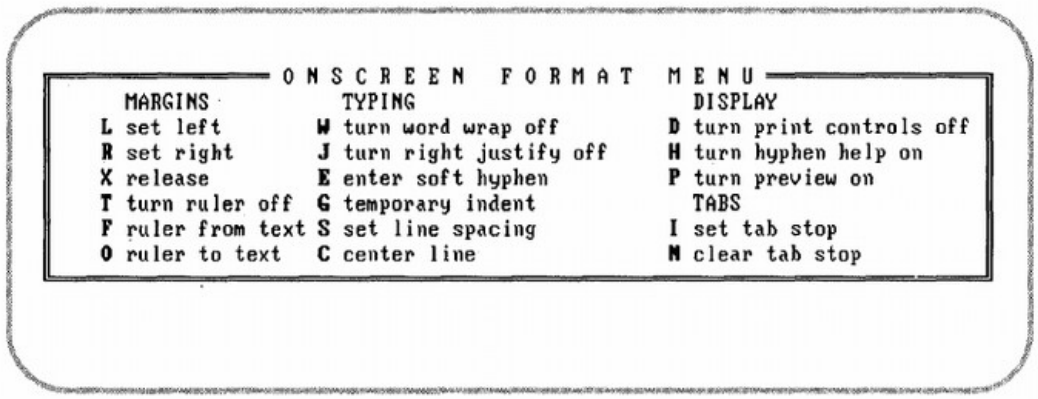
Not included in the rates are

Transfer services, sightseeing, meals (except as specified), tips to station porters, wines, spirits, mineral waters, laundry, theater tickets, and other items of a similar personal nature.

To type this document with its special page design, you'll use formatting commands. The formatting commands are on the Onscreen Format Menu.

The Onscreen Format Menu

The basic formatting commands you'll learn in this lesson appear on the Onscreen Format Menu below.



Centering Text

You'll begin by typing the heading. WordStar can automatically center text. You type the text, choose the command for centering, and the text on the line containing the cursor will center.

Type and center the heading.

1. At the editing screen, type **Itinerary**. Leave the cursor on the same line.
2. Press ^O. You'll see the Onscreen Format Menu.
3. Look under TYPING and find the command to center line at cursor.
4. Press C. The heading is centered.
5. Press ↵ twice to create a blank line.

The Ruler Line

Another important part of designing a document is setting tabs and margins. You can see the current tabs and margin settings in the ruler line at the top of the editing area.

When you create a new document, the left margin is automatically set at column 1 and the right margin is set at column 65. Tab stops are set at five-column intervals.

L----!----!----!----!----!----!----!----!----!----!----!--------R

The ruler line contains these symbols:

L and **R** indicate left and right margins.
! indicates tab stops.
– indicates columns.

If you change tabs and margin settings while you're creating or editing a document, the ruler line will reflect these changes. You'll learn more about ruler lines later.

Clearing Tab Stops

Some of the information in an itinerary is set up in columns. Before you set tabs for typing these columns, you'll need to clear the current tab stops.

When you press the command to clear tabs, you'll see a list of current tabs, decimal tabs (for typing columns of numbers), and information about clearing single tab stops or all tab stops at once.

Now clear all the tab stops on the ruler line.

1 At the Editing Menu, press **^O**. Find the command to clear tabs.

2 Press **N**.

3 Read the information on the screen.

4 Type **A** for "All" and press ↵ to clear all tab stops.

The ruler line now shows no tab stops.

Setting Tab Stops with Menu Commands

To type the travel information in columns you'll set five tab stops at columns 11, 20, 32, 43, and 52. As you set the tabs, you'll see them in the ruler line.

Set the tabs now.

1 Press **^OI** and read the information on the screen before you answer the prompt. Then type **11**↵ to set the tab stop at column 11.

2 Press **^OI 20** ↵ to set the tab stop at column 20.

3 Press **^OI 32** ↵ to set the tab stop at column 32.

4 Press ^OI **43** ↵ to set the tab stop at column 43.

5 Press ^OI **52** ↵ to set the tab stop at column 52.

Another way to set tab stops is with an "automatic" ruler line. See the "Reference Guide" for details.

Typing the Column Headings and Text

Once the tabs are set, you can type the headings. The headings are Depart, Date, Time, Arrive, Date, Time.

1 Type **Depart** and press ^**I** (or the **Tab** key).

2 Type **Date** and press ^**I** (or the **Tab** key).

3 Type **Time** and press ^**I** (or the **Tab** key).

4 Type **Arrive** and press ^**I** (or the **Tab** key).

5 Type **Date** and press ^**I** (or the **Tab** key).

6 Type **Time**.

7 Press ↵ twice.

Now that you've typed the column headings, you can type the next lines the same way. (If you tab too many times, you can press the **Backspace** key enough times to back up to the previous word. Then press ^**I** again.)

1 Type the rest of the text shown below. Be sure to press ^**I** or the **Tab** key to move the cursor to each tab stop.

```
                        Itinerary

Depart    Date      Time      Arrive    Date      Time

Vienna    10/19     09:00 a   Zurich    10/19     10:25 p ↵
Zurich    10/20     00:05 a   Berne     10/20     02:25 a ↵
↵
Not included in the rates are ↵
↵
```

Setting Margins

There are two ways to set margins:

- menu commands
- dot commands

You can use the commands on the Onscreen Format Menu: **^OL** sets the left margin and **^OR** sets the right margin.

Note: **^OX** releases margins if you want to type beyond the right margin. (See the "Reference Guide" for information about temporarily releasing margins.)

You can also use these dot commands to set margins:

.LM n sets the left margin (n is a column number).
.RM n sets the right margin (n is a column number).

Before you continue, you should learn about dot commands.

Dot Commands

WordStar has another set of commands you won't find on the menus. They are called dot commands.

Here is some basic information you should know about dot commands:

- You type a dot command into your document.
- A dot command begins with a dot (a period) in column 1, followed by a two-letter code, an optional space, sometimes more information, and ←┘.
- A dot command is stored with the text when you save a document.
- You can erase a dot command by erasing the line with **^Y**.
- Although you see it displayed on your screen, the dot command does not occupy a real line or print.

Although dot commands are shown in uppercase letters in this training guide, you can type them in either uppercase or lowercase letters. You'll find detailed information about dot commands in the "Reference Guide." All dot commands are listed on the *Command Card.*

Sometimes a dot command and a menu command serve the same purpose. If you plan to open a document again and reedit it, you should always choose the dot command. A dot command will be stored with text when you save your document.

Setting Margins with Dot Commands

Before you type the rest of the document, take these steps to set new margins for the paragraph below the schedule. Use the dot commands **.LM** (left margin) and **.RM** (right margin).

1. Starting at the cursor position in column 1, type **.LM 10** ↵.
2. Starting in column 1, type **.RM 55** ↵.
3. Type the last paragraph. As you begin to type, notice the dots at the beginning of each line. These are "soft" spaces inserted by WordStar.

```
                        Itinerary

Depart    Date      Time      Arrive    Date      Time

Vienna    10/19     09:00 a   Zurich    10/19     10:25 p
Zurich    10/20     00:05 a   Berne     10/20     02:25 a

Not included in the rates are

.lm 10
.rm 55
          Transfer services, sightseeing, meals (except
          as specified), tips to station porters, wines,
          spirits, mineral waters, laundry, theater
          tickets, and other items of a similar personal
          nature.
```

Changing Justified Text to Ragged Right

Justified text has all lines the same length, so that both margins are straight. When you start WordStar, justification is on. WordStar inserts "soft" spaces between words to make the line extend all the way to the right margin. See the "Reference Guide" for details about soft spaces.

Ragged right text has an uneven right margin. When you turn justification off, everything you type will be ragged right until you turn justification on again.

The right justify command works like a switch. The Onscreen Format Menu command to turn right justify on or off is **^OJ**. (You can also use the dot command **.OJ on** or **.OJ off**.)

Change the right margin of the paragraph to ragged right.

1. Move the cursor to the beginning of the paragraph.
2. Press **^O** and find the right justify command. Notice that right justify is on and the command will turn it off.
3. Press **J** to turn right justify **off**.
4. Press **^B** to align the paragraph.

The paragraph now has an uneven right margin.

Note: If you plan to reedit the document, you should use the dot command **.OJ off** to turn off justification. Dot commands are stored with the document, but control commands aren't.

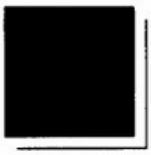
Printing the Itinerary

You've learned the basics for formatting a document. You've cleared and set tabs, changed margins, aligned paragraphs, and turned off justification.

If you want, you can practice some more. When you're ready, save and print the itinerary.

1. Press **^KD** to save TRIP.DOC.
2. Make sure your printer is on and ready.
3. Print **TRIP.DOC**.

In the next lesson, you'll add muscle to your WordStar skills with block moves. (If you want to stop here and start the lesson again later, press **X** to exit WordStar. Begin the training again at Lesson 4.)



Lesson 4

Working with Blocks of Text

In this lesson, you'll learn about editing blocks of text. You'll cover these subjects:

Marking a Block
Moving a Block
Hiding a Block
Column Block
Block Math (Totaling Two Numbers)

The block commands are the power tools of editing. With block commands, you can easily move text and reorganize your writing.

Block commands are also precision tools. You can use block commands to edit columns without disturbing the surrounding text. You can even do math.

In this lesson, you'll type a short brochure and edit it with block commands.

Starting Up

1 Unless you are continuing from Lesson 3, start WordStar.

2 Open a new document named BROCHURE.DOC.

3 At the editing screen, type the following text exactly as it is shown.

```
Excursions ↵
↵
Day 2 ↵
Rome: Morning and afternoon city sightseeing by motorcoach.
English-speaking guide optional. ↵
↵
Day 1 ↵
Florence-Rome: Leave at 8:30 a.m. by deluxe motorcoach. Arrive at
Rome in the afternoon. ↵
↵
Fare in first class hotels: $100.00. Bath optional: $25.00.↵
```

The paragraphs are out of sequence in the brochure: Day 2 comes before Day 1. You can reorganize the document with block moves.

The Block & Save Menu

The block commands you'll learn in this lesson appear on the Block & Save Menu below.

```
                    B L O C K   &   S A V E   M E N U
      SAVE                          BLOCK                          FILE
S save & resume edit     B mark begin          C copy      O copy    P print
D save document          K mark end            V move      E rename
X save & exit WordStar   H turn display on     Y delete    J erase
Q quit without saving    W write to disk       M math      L logged drive/dir
    CURSOR               N turn column mode on             R insert a document
0-9 set/hide marker      I turn column replace on          F run a DOS command
```

You've already used a Save command (^**KD**) to save and store a document on your disk. Now you'll use some of the Block commands to edit a document.

You'll find information about the rest of the block commands in the "Reference Guide."

Marking a Block

A block is a piece of text. It can be any size — as large as an entire document or as small as a single character. Before you can work with a block of text, you must define it by putting markers at the beginning and end of the block.

Mark the beginning of a block.

1 Move the cursor to the "D" in Day 1.

2 Press ^**K**. You'll see the Block & Save Menu.

3 Press **B** to mark the beginning of the block.

The symbol <B> appears to mark the beginning of the block.

Now mark the end of the block.

1 Move the cursor to column 1 of the first blank line following the paragraph.

2 Press ^**K**.

3 Press **K** to mark the end of the block. Notice the letters B nd K in the flag column at the right edge of the screen.

The <B> symbol at the beginning of the block disappears and the block is highlighted.

Note: If you put the markers out of sequence (the end marker before the beginning marker), a <K> will appear in the text before the <B>.

To mark a different block, you would repeat the block marking procedure elsewhere in your file.

Moving a Block

Put the paragraphs into the correct order.

1 Move the cursor to column 1 of the blank line below "Excursions" and press ↵ to create another blank line.

2 Press ^**KV** to move the marked block.

The block moved to the cursor position. The paragraphs are in the correct sequence.

Turning Block Display Off

You've moved a block of text, but the block is still highlighted. It's a good practice to turn block display off when you've finished working with it. WordStar works faster when block display is off. Also, a block could be accidentally erased with the block delete command (^**KY**) if the block is still displayed.

Turn off block display.

1 Press ^**KH**.

Note: The block is still there, but it is no longer displayed. If you pressed ^**KH** again, the block markers would reappear.

Column Mode

Column mode enables you to perform special block operations on a column. Column mode is particularly useful for editing tables containing columns of figures or text.

Mark a block of text in the center of a document and see what happens when you turn column mode on.

1 Move the cursor to the "L" in "Leave" in the Day 1 paragraph and press ^**KB**.

2 Move the cursor to the "B" in "Bath" in the last paragraph and press ^**KK**. Notice that everything between the block markers is highlighted.

3 Press ^**KN** to turn column mode on. Text to the left of the beginning marker is not included in the block. The same is true for text to the right of the end block marker.

4 Press ^**KN** again to turn column mode off.

Block Math

With block math you can total the numbers in the last paragraph.

1 Mark the beginning and end of the paragraph beginning with "Fare."

2 When the block is marked, press ^**KM**. The total appears at the upper left of your screen.

3 Press **Esc** to continue.

4 Press ^**KH** to hide the block.

WordStar also has a calculator that performs sophisticated calculations. See the "Reference Guide" for details.

Saving or Abandoning a Document

You've learned to mark a block of text and then tell WordStar what you want to do with it. You've moved a paragraph and you've used block math to add two figures. Practice some more, if you want. Then you can save the document or you can abandon it if you don't want to edit it again.

When you abandon a new document, you are returned to the Opening Menu without saving the document. When you abandon a document that was previously edited, you are returned to the Opening Menu without saving your changes.

1 Press **^KD** to save BROCHURE.DOC.

or

Press **^KQ** and type **Y** to abandon BROCHURE.DOC.

In the next lesson, you'll find and replace a word in a document and check spelling. (If you want to stop here and start the lessons again later, press **X** to exit WordStar. Begin the training again at Lesson 5.)

Lesson 5

Finding Words and Checking Spelling

In this lesson you'll learn about

Finding Words
Finding the Next Occurrence
Finding and Replacing
Checking Spelling

So far, you've been working with short documents. Editing a short document is easy to manage. But working with a longer document poses special problems. Imagine trying to make revisions or move blocks in a fifty-page file!

WordStar has two features that are especially helpful for editing large documents. First, with the WordStar finding feature you can search a document for specific text, numbers, or symbols. You can move the cursor to a specific place in a long document quickly. You can also have WordStar find and change a string of text throughout a document. Second, WordStar can check the spelling in a document and correct misspelled words.

In this lesson you'll learn how to use the finding and spelling check features. You'll work with a file that came on your program disk, DIARY.DOC. (Floppy computer users should already have copied this file onto your Training Work Disk. If not, do that now, then return here.)

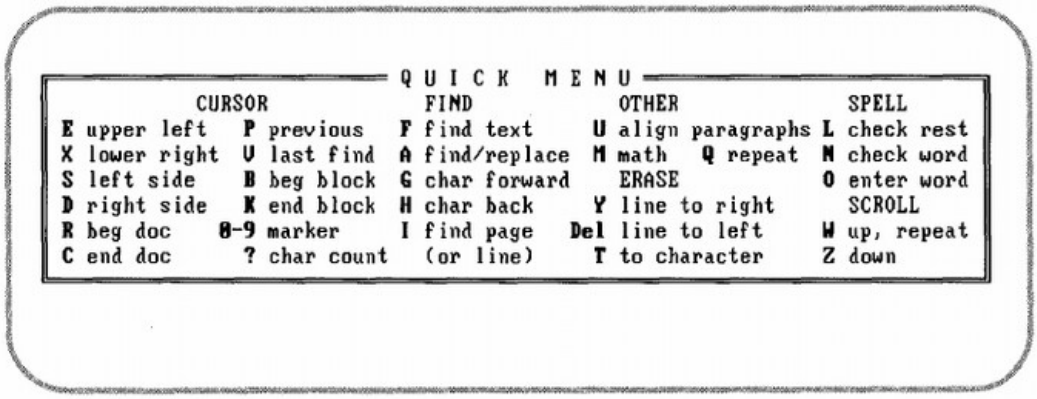
The Finding Commands

The finding commands are listed on a submenu of the Editing Menu called the Quick Menu. You can use the finding commands any time you're working in an open file. Follow these steps to get to the Quick Menu:

1. Open the file DIARY.DOC. (Besides typing the name of the file at the prompt and pressing ←┘, you can open an existing file another way. Move the cursor to the name of the file in the directory display, and press ←┘.)
2. On the Edit Menu, find the command for Quick Menu listed under MENUS.
3. Press ^Q.

The Quick Menu

The Quick Menu lists the WordStar "quick" commands. All of these commands begin with ^Q. When you're editing, you can bypass the display of the Quick Menu by pressing the two-letter command quickly. For example, if you press ^QD quickly, the cursor will move to the right side of the line and the Quick Menu doesn't display.



Finding a Word

WordStar can quickly locate up to 65 characters of text, including words, groups of words, numbers, and symbols. Locating words or phrases can be helpful when you're editing or when you want to find your place in a large document.

We'll have WordStar find a word in DIARY.DOC. Look at the list of commands under FINDING. When you want to locate one word or phrase, you press **F** (find).

1. Press **F** at the Quick Menu.
2. At the prompt "Find What?," type **London** and press ↵.
3. At "Option(s)?," press ↵ to skip. (You'll find out more about these options later.)

   The cursor moves to the first occurrence of the word "London" in your document.

Finding the Next Occurrence

WordStar can find the next occurrence of a word or phrase quickly. Notice that you're back at the Editing Menu. Look at the commands listed under OTHER for the command to "find again."

Tell WordStar to locate the next occurrence of "London" in the document.

1. Press ^**L**.

   The cursor moves to the next "London" in your text.
2. Press ^**L** again.
3. Continue to press ^**L** until you get to the end of the document and see the "end of search" message.
4. Press **Esc**.

Finding and Replacing

WordStar can find text and replace it with other text. This is helpful if you have to find a word or phrase in order to change it. WordStar can also search a document backwards, that is, move from the end to the beginning. Because you're at the end of the file DIARY.DOC, we'll tell WordStar to do a backwards search this time.

1 Press ^Q. Locate the command for "find/replace," on the Quick Menu.

2 Press **A**.

3 At the prompt "Find What?," type **London** and press ↵.

4 At the prompt "Replace with?," type **Rome** and press ↵.

Look at the "Options" this time. The options let you ask for a more specific search. This time, you need to tell WordStar to search backwards through the document.

5 Press **B** and press ↵.

WordStar finds the first occurrence of "London," this time moving backwards.

6 Look at the status line in the right hand corner of your screen. WordStar asks you if you want to replace the text.

Press **Y** and watch your text. "London" changes to "Rome"!

7 Press ^L to find the next occurrence of "London."

8 Replace the text. (Remember, press **Y** to replace text.)

9 Continue pressing ^L and replacing "London" with "Rome" until you reach the beginning of the file.

Automatic Replacing

You can speed up the finding and replacing process by letting WordStar replace your text automatically. You've just replaced all references to "London" in your text with "Rome." This time let WordStar change "Rome" back to "London" and make your trip diary correct.

1 Press ^QA. By pressing the keys in succession you went directly to the find prompt and bypassed the Quick Menu.

2 Type **Rome** and press ↵.

3 Type **London** and press ↵.

You need to tell WordStar to replace all occurrences of "Rome" with "London" automatically. In other words, you don't want to be asked every time.

4 At "Options?," press **G** (start from beginning to end) and **N** (replace without asking) and press ↵. (Just type the commands as **gn**.)

Watch your screen — the magic of word processing!

5 When WordStar reaches the end of the file, press **Esc**.

6 Press **^QR** to go back to the beginning of the file.

You can use the finding feature in a variety of ways in WordStar. Besides forwards and backwards finding and manual and automatic replacing, WordStar also does automatic paragraph alignment for the entire document (performs like **^B**), searches for parts of words, can ignore or search for specific case (upper or lower), and more. See **Finding and replacing** in the "Reference Guide" for more information about the finding options.

Checking Spelling

WordStar can help you find and correct misspellings and typos. You can use the WordStar spelling check feature in two ways — you can check the spelling of a word before you type it in your document or you can check spelling in a document that has been completed.

WordStar checks the spelling against a large dictionary that came with your package on the Dictionary Disk. Hard disk computer users have already copied the dictionary onto their hard disks and it's ready to use. Floppy disk computer users will be prompted by WordStar to switch disks.

You have another dictionary called the personal dictionary. As you use the spelling checker, you can add words (even names) to your personal dictionary that aren't in the main dictionary. You can put specialized words like technical, legal, or medical terms in your personal dictionary. WordStar checks spelling against both dictionaries.

The Spelling Check Commands

The spelling check commands are listed on the Quick Menu. Just like the finding commands, you can use them any time you're working in an open file. You can bypass the Quick Menu by pressing **^Q** then the spelling check command letter.

First, display the Quick Menu to familiarize yourself with the spelling commands. (You should still be in the file DIARY.DOC.) Press **^Q**. The commands you need are listed under SPELLING.

Checking the Spelling of a Whole Document

WordStar can check the spelling of a word before you type it in your document (^QO), a single word in your document (^QN), or an entire document (^QL).

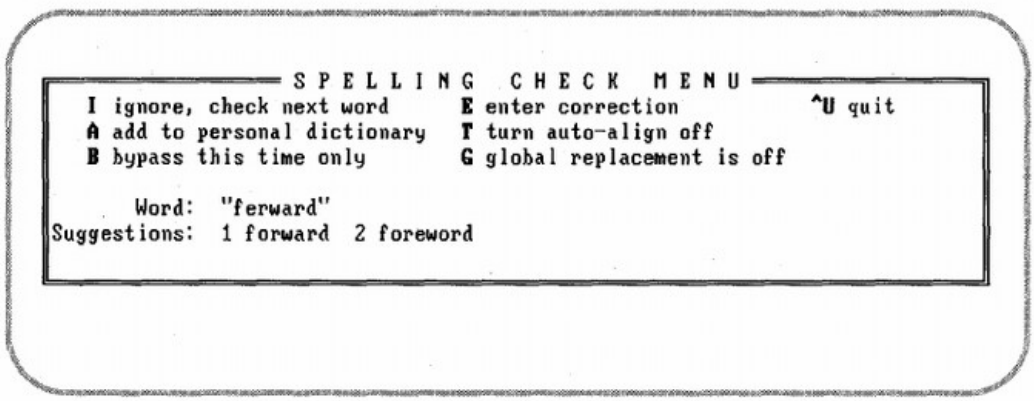
We'll run a spelling check on DIARY.DOC.

1 Position the cursor in column 1, line 1.

2 Press **L** to have WordStar check the spelling in the entire document.

(Floppy disk users will be prompted to switch disks.)

The cursor stops on the word "ferward," a typo, and the Spelling Check Menu is displayed. WordStar offers you one correct spelling suggestion.



3 Press **1** to tell WordStar to replace the incorrect word with the suggested correct spelling.

The spelling check continues.

WordStar stops on the word "Trafalgar" because it doesn't recognize this word. No suggestions are given.

Look at the choices on the Spelling Check Menu. You need to decide whether to have WordStar skip this word or add it to your personal dictionary.

4 Press **A** to add this word to the personal dictionary. Later, if WordStar comes across this word, it'll know the correct spelling.

WordStar stops on the word "bein," another typo.

5 Look at the suggestions. Notice that you press **M** to see more suggestions. To practice, press **M**. Then press **M** two more times to return to the first group of suggestions.

6 Press **2** to select the correct spelling of been.

WordStar stops on "inthe," a typo. In this case, you don't want to use the suggested word, Instead, you want to type a correction yourself.

7 Press **E** to select "enter correction."

8 At the prompt, type **in the** and press ←┘.

WordStar will continue to check the spelling until it reaches the end of the document. You can stop a spelling check at any time.

9 Press **^U** to stop the spelling check.

(Floppy computer users will be prompted to switch disks.)

10 Press **^KD** to save and exit the file.

Turn to the "Reference Guide" for a more extensive explanation of using the spelling checker and the Spelling Check Menu commands. For more practice, run a spelling check on your first training document, FIRST.DOC.

Now move on to Lesson 6, where you'll learn about printing and special printing effects. (If you want to stop here and start the lessons again later, press **X** to exit WordStar.)

Lesson 6

Printing

The last basic lesson is about printing. You'll cover these subjects:

Interrupting Printing
Print Controls Including Boldface and Underline
Print Options

You'll begin by printing the document you saved in the last lesson. As the document prints, you'll learn how to interrupt printing.

After reopening your document, you'll use two of WordStar's special printing effects, boldface and underline. You'll also change page settings, omit page numbers, and reset page offset.

When you print the document the second time, you'll learn that you can start or stop printing at a specific page number, vary the number of copies, or change printers.

When you're finished, you'll compare the two printouts.

Starting Up

1 Unless you're continuing from Lesson 5, start up WordStar.

Printing and Interrupting Printing

You'll begin by printing DIARY.DOC, the sample document you saved in Lesson 5. Before the printing is finished, you'll pause printing.

You may need to interrupt printing for several reasons, for example, to look over a page. Sometimes it's even necessary to stop printing altogether. You don't have to turn off the printer. You can interrupt or stop the printing.

Start to print DIARY.DOC. Then pause printing.

1 Make sure your printer is on and ready.

2 At the Opening Menu, press **P**.

3 Type **diary.doc** or move the cursor to the filename in the directory.

4 Press **Esc**. Printing begins and you're returned to the Opening Menu.

5 To pause printing, press **P** to get to the Printing screen.

6 Press **P** again to make the printer pause.

7 Press **C** to continue. Printing begins again.

When the document is finished printing, put the printout aside. You'll refer to it later.

If you accidentally choose the wrong file, you can stop printing by pressing **^U**. WordStar returns you to the Opening Menu where you can start again.

Reopening DIARY.DOC

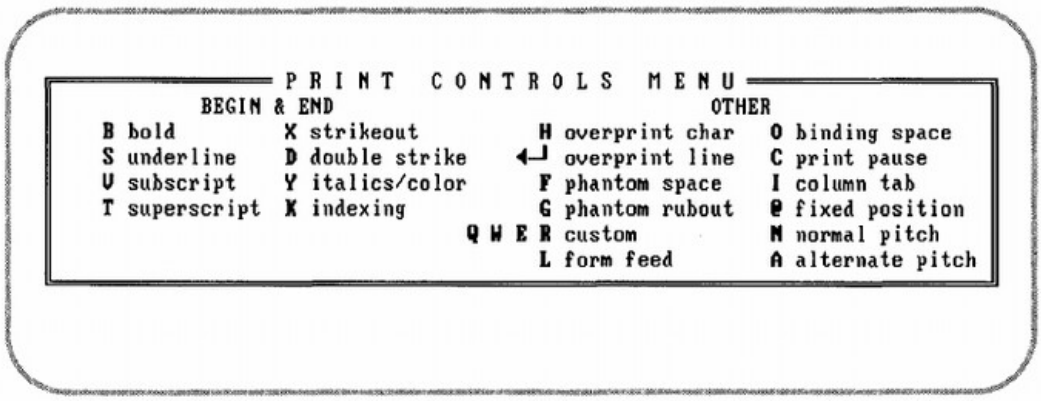
To learn about WordStar's special printing effects, you'll edit the sample file DIARY.DOC again.

1 At the Opening Menu, choose **DIARY.DOC**.

When you see the Edit Menu, you're ready to begin.

The Print Controls Menu

Under MENUS on the Edit Menu, you'll notice "^P print controls." The commands for creating special printing effects are found on the Print Controls Menu.



Some of the commands are listed under BEGIN & END. You must give these commands in pairs—before and after the text you want to be affected. If you forget to end the command, you won't get the effects you intended.

Boldfacing Text

Creating a special printing effect such as boldface requires just a few keystrokes.

Boldface the heading.

1. Move the cursor to "T" in "Trip Diary."
2. Press ^**P**. You'll see the Print Controls Menu.
3. Press **B**. Notice that WordStar puts a ^B on the screen to show where the boldface begins and highlights the text that follows.
4. Move the cursor to the space following "Diary."
5. Press ^**PB**. The ^B on the screen shows where the boldface ends. The highlighting stops before the second ^B.

When you give most of the commands from the Print Controls Menu, a symbol such as the ^B for boldface is inserted into a document. (WordStar knows that the symbols are not part of your text and will not print them.)

The text between the pair of ^B print control symbols appears highlighted on a monochrome screen and in a different color on a color monitor. The highlighted text will print in boldface.

Deleting a Print Control Symbol

When you revise a document, be careful not to rearrange or delete print control symbols. If you do, you may be surprised.

See what happens when you erase one of a pair of print control symbols.

1 Erase one of the ^B print control symbols. Use one of the following: **^G**, **^T**, the **Del** key, or the **Backspace** key. All the text following the remaining print control is highlighted and will print in boldface.

2 Reenter the boldface command in the same place. Only the enclosed text is highlighted.

Underlining Text

Underlining works like boldface. Underline the headings, "September 10" and "September 12."

1 Move the cursor to the "S" in the first occurrence of "September."

2 Press **^PS**. The ^S on the screen shows where the underlining starts.

3 Move the cursor to the space following the number.

4 Press **^PS**. The ^S on the screen shows where the underlining stops.

5 Press **PgDn** (or **^C**) four times and move the cursor to the second diary entry, "September 12." Repeat steps 1–4.

The text between the ^S symbols will appear underlined on most monochrome screens and in a different color on a color monitor. The text will be underlined when the document prints.

Turning Display On and Off

If you want to see how your text will look without print control symbols, you can hide them. The command to turn the display of print controls on or off is **^OD.**

Hide the print control symbols.

1 Press **^O** and find the command listed under DISPLAY on the Onscreen Format Menu.

2 Press **D** to turn display off. Notice that the print control symbols are gone, but the text is still highlighted and underlined.

The print controls may be hidden, but they're still in effect. Pressing **^OD** will turn display on again.

Inserting Page Breaks

Every page in a WordStar document is automatically set for 66 lines with 55 lines of text. When the cursor reaches the end of the page you're typing, WordStar automatically inserts a page break. The automatic page break, which is indicated by a broken line with a P in the flag column, signals the end of one page and the beginning of another.

Sometimes, though, you'll want to end a page before it's filled with text. You don't have to fill a page with blank lines to reach 55 lines. You can insert a new page break with the dot command **.PA**.

Insert a page break in DIARY.DOC.

1 Move the cursor to column 1 of the blank line above "September 12." Notice that the status line tells you that you're on page 1.

2 Type **.PA** ↵. Look at the status line now—you're on page 2.

Notice how WordStar shows you the new page break.

Remember, WordStar will automatically insert page breaks if the page fills with text.

Omitting Page Numbers

WordStar automatically numbers all pages in any document starting with number 1. Page numbers appear at the bottom of each page when you print your document. Sometimes, though, you may not want page numbers in a document.

You can omit page numbers with the dot command **.OP**.

Tell WordStar to omit page numbers.

1 Press **^QR** to make a quick cursor move to the top of the document. Be sure the column number in the status line says C01.

2 Type **.OP** ↵.

When the document prints, there will be no page numbers.

Resetting Page Offset

Page offset determines how far text is offset from the left edge of the page. WordStar automatically offsets text 8 spaces or about one inch. Unless you change the offset, column 1 in your document will begin an inch from the left edge of the paper.

You can change page offset by typing the dot command **.PO** and a number. The number determines how many spaces column 1 will be from the left edge of the paper.

Change the page offset of the text in DIARY.DOC to 4 spaces.

1 In column 1 on the same line as "Trip Diary," type **.PO 4** ↵.

When the document prints, the text will be offset 4 spaces from the left edge of the paper.

Saving the Document

1 Press **^KD** to save DIARY.DOC. You'll see the Opening Menu.

Taking Advantage of Print Options

You're ready to print your document. Make sure your printer is on and ready.

Until now, you've skipped the seven questions WordStar asks about how you want to print a document. This time you'll read the questions and answer them one at a time.

Give the command to print.

1 At the Opening Menu, press **P** and type **diary.doc**. DO NOT PRESS ESC. Press ↵. You'll see the first question, "Number of copies?".

2 Read the information below and then press ↵ to answer each question.

Number of copies?
To make one copy, press ↵.
To make more than one, type the number you want.

Pause between pages?
To print without pausing, press ↵ for no.
To pause at the end of each page, for example, to insert a different sheet of paper, type **y** for Yes.

Use form feeds?
If your printer is already set for a regular 11-inch sheet of paper, press ↵ for no.
If you want WordStar to use form feeds when moving to the next page or if your printer has a sheet feeder, type **y** for Yes.

Starting page?
To start printing on page 1, press ↵.
To start printing at any other page, type that page number.
To print individual pages, type the page numbers separated by commas.
To print a range of pages type the beginning and ending page numbers separated by a hyphen.

Ending page?
To end printing after the last page of the document, press ↵ for last.
To end printing at any other page, type that page number. (This question will not appear if you typed an ending page number in the previous question.)

Nondocument?
To print a formatted document as it is, press ↵ for no.
To print a nondocument or a document including dot commands that will be printed but not executed, type **y** for Yes. (Margins and page layout will be set by WordStar.)

Name of printer?
To use the installed printer, press ↵.
To select a another printer from the displayed list, type the printer name or move the cursor to the printer's name and press ↵.

When you've answered the last question, WordStar prints DIARY.DOC.

Comparing Printouts

Compare this printout with the one you printed at the beginning of this lesson. The second printout contains these changes:

The heading is printed in boldface and the dates are underlined.
The second diary entry begins on a new page.
Page numbers are omitted.
The left offset is four spaces narrower than it was.

What's Next?

You've learned the basic techniques for opening, editing, and printing a document. Now you may want to put aside your training lessons and practice what you've learned. If you still need some help, you can review a lesson or parts of a lesson. It won't take long.

The lessons that follow cover features you won't want to miss. When you're ready, look through the remaining lessons and get an idea of what other WordStar features are available to you. Then you can start with Lesson 7 and finish all the lessons, or you can select just the lessons that interest you.

Detailed information on every function of WordStar is available in the "Reference Guide." It is arranged in alphabetical order for your convenience.

Lesson 7

More Features

In this lesson you'll learn about

- Changing the Help Level
- More Quick Commands
- Shorthand
- Column Blocks
- Using the Calculator

WordStar is a word processing program rich in features and functionality. In the first six lessons of the "Training Guide" you were introduced to most of WordStar's menus and some basic commands. You'll find that the more you use the program, the more you'll learn, but there are a few features that merit some extra attention. This lesson contains exercises on some of these features.

The lesson is written so you can work your way from start to finish or select individual subjects at random.

If you have a floppy disk computer, you'll need your Training Work Disk. If you don't have a Training Work Disk, refer to Lesson 1 for instructions on creating one.

Changing the Help Level

You've probably been working with limited space on your screen. The WordStar menus and the function key assignments take up a lot of room. You can change the help level (remove the menus) to allow for more space.

Practice changing the help level.

1 Open the file TEXT.DOC.

You change the help level with the help command, **^J**.

2 Press **^J**. Read the screen. Notice that to change the help level you press **^J** again.

3 Press **^J**. Read the screen.

You have four help levels to choose from. Your current help level is probably **3**. Let's set another help level.

4 At the prompt "What help level do you want?," type **2** and press ↵.

Now you have more space on your screen. At level **2**, the Edit Menu isn't displayed, but other menus will be. With the Edit Menu gone, you have more room to see the document you're typing. The menus containing commands you might not use very often will still be displayed.

5 Press **^Q** to display the Quick Menu. (You'll notice a slight delay. This allows you time to select a quick command before the Quick Menu is displayed.)

6 Press **Esc** to clear the Quick Menu.

If you want, you can leave the help level at **2**. To change the help level back to **3**, repeat the steps above.

If you're continuing with the lesson, keep the file TEXT.DOC open. Otherwise, press **^KQ** (quit without saving) to exit and return to the Opening Menu.

More Quick Commands

In Lesson 5 you were introduced to the Quick Menu and you used some finding and spelling commands. Following is an explanation of more quick commands. Read through this section and practice using the commands in the file TEXT.DOC.

Quick Cursor Moves

The keys for moving the cursor are arranged in a diamond on your keyboard. If you glance at your keyboard, you'll notice how the quick cursor control commands are part of a diamond too.

Command	Function
^QE	Moves the cursor up to the first text character on the screen (including spaces and carriage returns).
^QX	Moves the cursor down to the space after the last text character on the screen (including spaces and carriage returns).
^QS	Moves the cursor to the beginning of a line.
^QD	Moves the cursor to the end of a line.

(^QE is equivalent to **Home** and ^QX is equivalent to **End** on the numeric keypad.)

Quick Erase

Command	Function
^QDEL	Erases everything on the line to the left of the cursor.
^QY	Erases everything on the line to the right of the cursor.
^QT	Erases everything between the cursor and some other character following the cursor. WordStar prompts you for the character.

Finding

Command	Function
^QI	Finds a page. WordStar prompts you for the page number.
^QG	Searches forward for a single character. WordStar prompts you for the character.
^QH	Searches backward for a single character. WordStar prompts you for the character.

TIP *To move the cursor to the end of the sentence the cursor is in, press* ^**QG** *then* **.** *(a period).*

Quick Aligning

Command	Function
^**QU**	Aligns an entire document. WordStar pauses briefly at the end of every paragraph to give you the chance to stop the aligning by pressing ^**U**.

Quick Scrolling

Command	Function
^**QR**	Moves the cursor to the beginning of a document.
^**QC**	Moves the cursor to the end of a document.
^**QW**	Scrolls the screen up one line at a time but continuously. You can control the speed of the scrolling (zero is fastest, nine is slowest). Pressing any key stops the scrolling.
^**QZ**	Scrolls the screen down one line at a time but continuously. (Works like ^**QW**.)

Press ^**KQ** to exit the file TEXT.DOC.

Shorthand (Keyboard Macros)

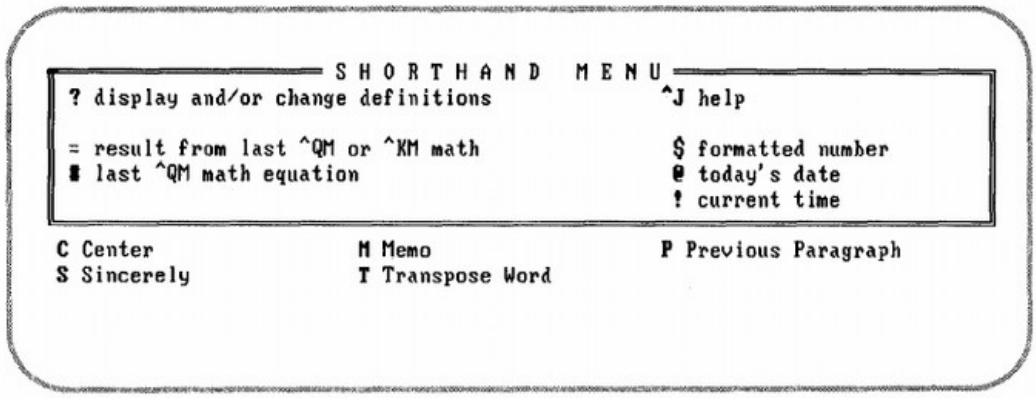
Shorthand is a timesaving feature that allows you to assign a single character to a longer line of text or commands. Using shorthand can save you many keystrokes on repetitive tasks.

For example, if you type a specific name regularly, you can use shorthand and assign this text a single letter or number, N for instance. Then when you're working in a file, instead of typing the name, you press **Esc**, then **N** to have WordStar insert the name automatically. (In computer lingo, this feature is called keyboard macros.)

You need to learn two aspects of shorthand—how to use shorthand characters while you're working in a file and how to create shorthand characters and definitions.

Before you begin using shorthand, you should become familiar with the Shorthand Menu. Look at the Opening Menu and locate the shorthand command. (You can also display the Shorthand Menu while you're editing a file.)

1 Press **Esc**. The Shorthand Menu is displayed.



The shorthand screen consists of a menu and a listing of your shorthand characters that have been defined. Notice the shorthand character is displayed in boldface followed by a word or phrase to remind you what the shorthand character does. Five shorthand characters are listed on the menu itself (=, #, $, @, !). These have been preset; you can't change them. See the "Reference Guide" for more information on using these characters.

The other shorthand characters (C, M, P, S, T) have already been defined and are ready to use. You can change these later if you want. One shorthand character contains text (M for memorandum), three contain commands (P for cursor to previous paragraph, T for transpose word, and C for center), and one contains text and commands (S for sincerely and three carriage returns.)

Using Shorthand Characters

Now, practice using shorthand characters.

1 Create a file called PRACTICE.DOC.

2 Press ↵ twice to move the cursor in column 1 to line 3.

First, we'll use a shorthand character and have WordStar insert some text.

3 Press **Esc**. The Shorthand Menu is displayed.

4 Press **M**. (Shorthand characters can be either upper- or lowercase.)

WordStar inserts the word "Memorandum," and you've used only two keystrokes.

Next, we'll use a shorthand character for some commands.

5 Press **Esc**, then **C** (C was defined for centering).

WordStar centers the text.

Defining Shorthand Characters

Now that you know how to use shorthand characters to speed up your word processing, we'll look at how you can create and define your own shorthand characters.

You should be back at the Edit Menu in the file PRACTICE.DOC.

1 Press **Esc**, then **?**.

Under the heading MENU & KEY DEFINITIONS is a list of all the currently defined shorthand characters, along with a reminder of what each does. Notice that the five special shorthand characters (=, #, $, @, !) don't appear on the menu because you can't change their definitions. "Bytes available" informs you of how much memory you have for more definitions. (You can set aside more memory in the WSCHANGE program.)

A shorthand character can be any single letter or number, making a total of 36 possible shorthand definitions. The maximum number of characters in a shorthand definition is 80.

Define a shorthand character for some text.

1 At the prompt "Character to be defined?," type **E**.

2 At the prompt "Description for ESC menu?," type **employees** and press ↵.

3 At the prompt "Definition," type **A special notice to all employees:** and press ↵.

Notice that the shorthand character and definition are now listed with the other shorthand characters in alphabetical order. You can continue creating shorthand definitions or you can exit by pressing **^U**.

4 Press **^U**.

5 At the prompt "Store changes onto disk?," type **Y**. Your shorthand character and definition are saved in a file. (For floppy disk systems, the file is on the Program Disk.)

You should be back at the Edit Menu.

6 To try out your new shorthand character, put the cursor in column 1, line 6. Press **Esc**, then **E**. WordStar inserts the line of text.

Now, define a shorthand character for commands.

1 Press **Esc** to display the Shorthand Menu. Note that the shorthand character E you just defined is on the menu.

2 Press **?**.

3 At the prompt "Character to be defined,?" type **H**.

4 At the prompt "Description for ESC menu?," type **heading** and press ←┘.

At the next step you're going to define the shorthand character with both text and commands. You'll type a heading and then the commands for centering. If you were centering and typing a heading you'd use these keystrokes:

Gulliver's Travel Service^OC

You need to enter this the same way for your shorthand definition. In other words, you must press the actual control command for centering. Most important though, to enter any control command you must press **^P** first. This is to tell WordStar not to execute the command.

5 At the prompt "Definition?," type **Gulliver's Travel Service**. Then press **^P** followed by **^OC**. Remember, you press the **Ctrl** key then the letter(s). You don't type the character

Your definition should look like this:

Gulliver's Travel Service^OC

Notice that the **^P** isn't displayed.

6 Press ←┘.

7 Press **^U**, then type **Y** at the prompt.

8 To try out your new shorthand character, move the cursor to line 1, column 1. Press **Esc**, then **H**. WordStar inserts and centers the text.

9 Press **^KQ** to quit and abandon the file.

Remember, the shorthand definition contains the keystrokes you would normally type. To enter a control character, you must press **^P** just before pressing the control command.

Advanced Shorthand

So far, you've been practicing using shorthand with very simple examples. As you become more familiar with shorthand, you'll figure out ways to use this feature to best meet your needs.

Shorthand definitions are limited to one line. Following, though, is a lesson that illustrates how you can create shorthand characters that will insert text of more than one line. It's done by inserting shorthand characters within a shorthand definition.

Let's say you want to have the following heading typed, partially boldfaced, and centered:

Gulliver's Travel Service
152 Lilliput Street
San Francisco, CA 94118

First, you have to define each line individually.

1 At the Opening Menu, press **Esc**.

2 Follow the steps in the previous section and create three new shorthand definitions, one for each line of the heading.

First line Give the first line the shorthand character 1 and call it "name." In the definition, enter control commands to boldface and center the text. Enter **^M** (carriage return) at the end of the definition.

Use the following series of keystrokes for the definition. Remember, you must press **^P** before you enter a control command.

^P^P^P^BGulliver's Travel Service^P^P^P^B^P^OC^P^M

When you're finished entering the keystrokes, the definition should look like this on your screen:

^P^BGulliver's Travel Service^P^B^OC^M

Second line Give the second line the shorthand character 2 and call it "street." In the definition, enter control commands to center the text. Enter **^M** (carriage return) at the end of the definition.

Use the following series of keystrokes for the definition. Remember, you must press **^P** before you enter a control command.

152 Lilliput Street^P^OC^P^M

When you're finished entering the keystrokes, the definition should look like this on your screen:

152 Lilliput Street^OC^M

Third line Give the third line the shorthand character 3 and call it "city." In the definition, enter control commands to center the text. Enter **^M** (carriage return) at the end of the definition.

Use the following series of keystrokes for the definition. Remember, you must press **^P** before you enter a control command.

San Francisco, CA 94118^P^OC^P^M

When you're finished entering the keystrokes, the definition should look like this on your screen:

San Francisco, CA 94118^OC^M

Next, you need to define a fourth shorthand character and include the three shorthand characters you just defined.

3 Define a fourth shorthand character. Give this one the character H and call it "heading." (This will change the shorthand character H you defined in the previous exercise.)

Use the following series of keystrokes for the definition. Esc stands for the Escape key. Press **^P**, press the **Esc** key, press 1, press **^P**, and so on.

^PEsc1^PEsc2^PEsc3

When you're finished entering the keystrokes, the definition should look like this on your screen:

Esc1Esc2Esc3

You've defined a shorthand character with the keystrokes that will tell WordStar to enter the three shorthand characters 1, 2, and 3 in succession.

4 Press **^U** then **Y** at the prompt to save your definitions and return to the Opening Menu.

5 Open a new file. Try the shorthand character H you just created.

6 With the cursor in column 1, line 1, press **Esc**, then **H**. WordStar enters three lines with one shorthand character.

If you don't get the three-line address, go back over the description of each definition to make sure you've typed the keystrokes exactly. Then try again.

7 Press **^KQ** to quit and abandon the file.

This whole process is called nesting shorthand keys. You can also try chaining shorthand definitions by putting the Esc-character sequence at the end of the definition. You could also have a shorthand definition reference itself by entering its own Esc-character sequence at the end. This process, called looping, would be useful for doing a repetitive task that can't be performed with a single command. You press **^U** to stop the loop.

Column Blocks

You may need to use WordStar for typing columns of text or tables. Editing columns can be tricky because altering one column can sometimes affect how another column lines up. WordStar has a handy feature called column blocks, which can help you edit and work with columns of text. By switching modes from a horizontal arrangement of text to a vertical arrangement of text, you can work with columns of text easily.

In this lesson you'll mark and move a block of text from a table. You'll use a sample file called TABLE.DOC.

1 Open the file TABLE.DOC. Notice the table includes graphics as well as columns of figures.

2 Press **^K** to display the Block & Save Menu. Find the command to turn column mode on.

3 Press **N**. Notice the word "Column" is displayed in the status line. This indicates column mode is on.

Now, mark a column block.

4 Move the cursor to the space just to the left of the "M" in the phrase "Maximum g." Press **^KB**.

5 Move the cursor down to the last line of the column to the number 3.10. Then move it to the right until it's positioned one space past the vertical column line. Press **^KK**. The block is highlighted.

Now, delete the block.

6 Press ^**KY**. Notice how the other columns to the right of the one you removed moved over to fill in the space.

   Another command to turn column replace on or off is used if you don't want to have the other columns shift to fill in. We'll remove the block again, this time turning column replace on.

7 Press ^**U** to bring the block back.

Now, we'll start over and mark the block again.

1 Press ^**K**. Find the command to turn column replace on.

2 Press **I**. Look at the status line. "ColRepl" tells you column mode is on and column replace is on.

3 Mark the block again. (Follow steps 4 and 5 above.)

4 Press ^**KY** to delete the block. Notice this time with column replace on, the text didn't move but left a space.

5 Press ^**KQ** to exit and abandon the file TABLE.DOC.

You've just completed two very simple column operations. There's a lot more you can do with column blocks. See **Column blocks** in the "Reference Guide."

Using the Calculator

WordStar has a built-in calculator you can use while you're editing. All the usual mathematical operations are available — addition, subtraction, division, multiplication, and exponentiation. Additional functions are natural and common logarithms, square root, integer, and the trigonometric functions sine, cosine, tangent, and arctangent.

Several symbols (operators) are used in WordStar's math equations.

Operator	Function
+	addition
-	subtraction
^	exponentiation (raising a number to a power)
*	multiplication
/	division

You can use these operators in any combination for almost any calculation. Equations are limited in length to the width of the screen.

When there is more than one operator in a line, WordStar performs the operations in a specific order — exponentiation, then multiplication, division, addition, and subtraction. When operations are of equal precedence, WordStar performs the operations from left to right.

You can change the order in which WordStar performs operations by using parentheses to enclose operations that are to be done first. You can enclose parentheses within parentheses for more complicated calculations. WordStar always performs the operation within the innermost set of parentheses first.

Practice using the onscreen calculator.

1 Open a file called MATH.DOC

2 Press ^**QM** to display the Math Menu.

3 Type an equation.

4 Press ↵.

   You'll find the answer at "Last result:" in the upper right corner of the menu.

Try some of the following equations:

2^3+4–5/6*7	(Answer: 6.16666666667)
2^(3+4–5)/6*7	(Answer: 4.66666666667)
2^((3+4–5)/6*7)	(Answer: 5.03968419958)

To learn about the more advanced mathematical functions you can perform with the calculator, see **Calculator** in the "Reference Guide."

You've covered some of WordStar's useful features. In the next lesson, Advanced Formatting, you'll build on what you learned about formatting in Lesson 3.

Lesson 8

Advanced Formatting

In this lesson you'll learn about

- More Onscreen Format Commands
- Headers and Footers
- The Ruler Line
- Automatic Indentation

Formatting determines how a document will look when it's printed. There's a lot you can do with WordStar in terms of designing documents. In Lesson 3 you were introduced to some basic formatting commands. In this lesson, we'll cover a few more formatting techniques that you should find helpful.

You can work your way through the lesson from start to finish or select individual subjects at random.

More Onscreen Format Commands

You should already be familiar with a few of the onscreen format commands. There are several other very useful commands you should know about. Following is an explanation of these commands. Open the file TEXT.DOC and practice using some of the commands.

Margins

Command	Function
^OT	Turns the ruler line on and off. This gives you more room on your screen to display text.
^OO	Inserts a copy of the current ruler line in your document. The new ruler is inserted as a **.RR** command. If you make margin and tab changes in a document by pressing **^OO**, you can insert the ruler line in your document and it will be stored and saved with the document. You can edit this ruler line.

Typing

Command	Function
^OW	Turns word wrap off and on. If you turn word wrap off, you have to end each line yourself by pressing ↵, just as you would on a typewriter.
^OE	Makes a soft hyphen. A soft hyphen prints only when it lands at the end of a line. When you use **^OE** to hyphenate a word, the hyphen won't print if the position of word changes in the paragraph. A word's position would change, for example, when you use **^B** to realign the text.
^OG	Makes a temporary indent.

Display

Command	Function
^OH	Turns hyphen help on and off. With hyphen help off, words that don't fit on the end of a line go to the next line. With it on, WordStar will stop and prompt you to enter a hyphen or not.
^OP	Turns preview on and off. With preview on, the dot commands are hidden so you can see what your document looks like without them. You can't edit your document until you turn preview off by pressing ^OP again.

Footers and Headers

Footers are special lines that are printed at the bottom of every page, and headers are special lines that are printed at the top of every page. Using footers and headers can be useful in documents where you want certain information to appear on every page, such as a chapter title. With footers and headers you don't have to type this information every time on the page. WordStar inserts it automatically.

You can create footers and headers of up to three lines each. Normally, WordStar prints a footer that contains the page number in column 28.

To create a footer or header, use the following dot commands:

Command	Purpose
.FO or .F1	first line of footer
.F2	second line of footer
.F3	third line of footer
.HE or .H1	first line of header
.H2	second line of header
.H3	third line of header

Practice inserting a header and a footer in the file TEXT.DOC.

1 Open the file TEXT.DOC.

2 Press ↵ three times to make some room at the top of the file for the dot commands.

3 Move the cursor back up to column 1, line 1.

4 Type **.HE** to begin the header. (Remember, dot commands can be in upper- or lowercase.)

5 Type **Gulliver's Travels**.

6 Move the cursor over to column 52 and type **Part I**.

7 Move the cursor back to column 1, then down one line directly below the **.HE** and type **.FO**.

8 Move the cursor to column 28 and type **Page #**.

   You can have WordStar put the page number anywhere you want in the footer. The symbol # stands for the page number.

9 Save and print the file. (For quick printing, press the **Ctrl** key and the **PrtSc** key.)

Notice how the text in the header and footer repeats on each page. The page number you typed as # prints with the actual page number.

You can use footers and headers in many ways. See **Footers and headers** in the "Reference Guide" for more information.

The Ruler Line

The ruler line displays a document's left and right margins and tab stops. When you create a new document, the left margin is automatically set at column 1 and the right margin is set at column 65. Tab stops are set at five-column intervals. In Lesson 3 you learned how to clear tabs, set new tabs, and change the left and right margins with dot commands. But there's more to know about working with ruler lines in WordStar.

First, it's important to conceptualize how WordStar reads the formatting commands in your document.

1 Open the file RULER.DOC.

2 With the cursor on the first line, slowly move the cursor down through the document and watch the ruler line as the cursor moves past dot commands.

   WordStar gets its formatting signals from the dot commands.

Next, it's important to understand the concept of "saving" formatting instructions in a document. Let's say you create a document, make margin changes with the control commands **^OL** and **^OR**, and change

tabs with ^**OI**. When you save this document and return to it later, the default ruler line will appear and none of the margins and tabs you set will be in effect. This doesn't happen if you use dot commands (**.LM** and **.RM**) because dot commands are stored and saved with your document.

If you make tab changes in a document and want them saved, you must "embed" a ruler line in the document at the point where the new tabs begin. You use the dot command .RR for this. There's a quick method for embedding a ruler line: the ^**OO** command.

Practice embedding a ruler line in RULER.DOC.

1. Move the cursor to line 18, column 1.
2. Press ^**ON**, then **A** ↵ to clear all tab stops. Notice the ruler line is clear.
3. Press ^**OI** and set a tab stop at 10. Set two more tab stops at 30 and 45. Notice the tab settings on the ruler line.

   To make sure these tab stops are saved with the document, embed the ruler line you just set.
4. Press ^**OO**. WordStar inserts the dot command **.RR** and a copy of the current ruler line.

   You can even edit this ruler line and change the tab stops and margins if you want. You can also type a ruler line yourself. You just start the line with **.RR** and then type the ruler using the standard ruler line characters, such as an exclamation point for a tab.
5. Move the cursor down and type some text at the tabs. (Press the **Tab** key, type a word, press the **Tab** key, type a word, etc.)
6. Press ^**KD** to quit and save the file.
7. Open the file RULER.DOC again. Notice that the ruler line at the top of the file is now back to the default settings. Move the cursor through the file. When the cursor reaches the embedded ruler line where you set the tabs, notice that the tabs and your settings were saved.

Remember, if you want to save your tab settings you must embed your ruler line. With ^**OO**, WordStar will automatically embed the current ruler line in your document. You can edit this ruler line. You can also create your own ruler line by typing **.RR**, then typing in the ruler line.

Automatic Indentation

Word wrap is one of the features that makes word processing fast and easy. You don't have to put in a carriage return at the end of every line. But sometimes you need to create documents with text that requires specific indentations—a paragraph or numbered list, for example. WordStar has an automatic indentation command, **.PM**, that you use to manage word wrap for indented text.

We'll look at the technique for using **.PM** for indenting a paragraph and for creating a "hanging" indentation in a numbered list.

Paragraph Indentation

1 Open a practice file called INDENT.DOC.

2 With the cursor at line 1, column 1, type **.OJ off** to turn justification off. (This technique works best with justification off.)

3 Move the cursor down one line in column 1. Type **.PM6**. (You've just told WordStar to indent the first line of a paragraph to column 6.)

4 Move the cursor to the next line and type this text:

```
Word processing is a computer-age term for typing and
editing any kind of text like letters, memos, articles, reports,
even books. Word processing involves typing into a computer, but
it's more than just typing. ←┘
←┘
With a typewriter, you see words on paper as you type. When you
use a word processor, you see words on the computer screen as you
type.
```

Notice how the first line of each paragraph indented 6 spaces.

When you want to turn paragraph indentation off, you type .PM in column 1 and press ←┘.

5 With the cursor in column 1, type **.PM** and press ←┘. Watch the ruler line—the **P** for paragraph indentation disappears.

Hanging Indentation

Sometimes you need to have text continuously wrap to an indented space. You can use **.PM** to create a hanging indentation.

1 In the file INDENT.DOC, place the cursor on column 1, line 10.

2 Type **.PM1**.

3 Move the cursor under the **.PM** in column 1.

4 Type **.LM6**.

5 Move the cursor under the **.LM** in column 1. Type **1.** and press the **Tab** key. Now type this text:

```
As you read your text on the screen, you can change it and
rearrange it until it looks just the way you want.
```

6 Press ↵ twice.

Notice how the text wrapped and held where you set the left margin at column 6. The text will continue to hold until you press the ↵ key.

7 Type **2.**, press the **Tab** key, and type this text:

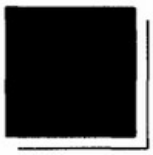
```
You can save text typed with a word processor and use it
again later. Your text is electronically saved in a
file.
```

8 Press ↵ twice.

You can remove the indentations by typing **.PM** and **.LM** in column 1, again pressing ↵ after each.

9 Press **^KQ** to exit the file.

As you gain experience with WordStar, you'll find other ways of designing and formatting your documents. Next, in Lesson 9 you'll learn about some advanced printing techniques.



Lesson 9

Chain Printing and Nested Printing

In this lesson, you'll learn how to connect documents during printing. You'll cover these subjects:

Chaining files
Nesting files

Chain printing connects several files in sequence, linking them like chapters in a book.

Nested printing connects files by inserting one or more files into a document. You can insert one file within another and another file within that one. Nesting files is handy for inserting standard paragraphs from different documents into another document.

When you chain or nest documents, you combine them during printing rather than on disk.

What You'll Need

In this lesson, you'll use the six sample files listed below. These files are on your Training Work Disk. (If you haven't copied your sample documents onto your Training Work Disk, refer to Lesson 1 for instructions.)

CHAPTER1.DOC SAMPLE1.DOC
CHAPTER2.DOC SAMPLE2.DOC
CHAPTER3.DOC SAMPLE3.DOC

Chaining Files

The best way to chain files is to use a command file. The command file contains dot commands that connect several files in sequence. Then each time you want to chain print the group of files, you just print the command file. WordStar lets you chain an unlimited number of files when you create a command file.

Note: When you're chaining your own files, make sure that each file ends with a carriage return (↵).

In this example, you'll create a command file named CHAIN1.DOC that connects three sample files, CHAPTER1.DOC, CHAPTER2.DOC, and CHAPTER3.DOC. The sample files represent chapters in a book.

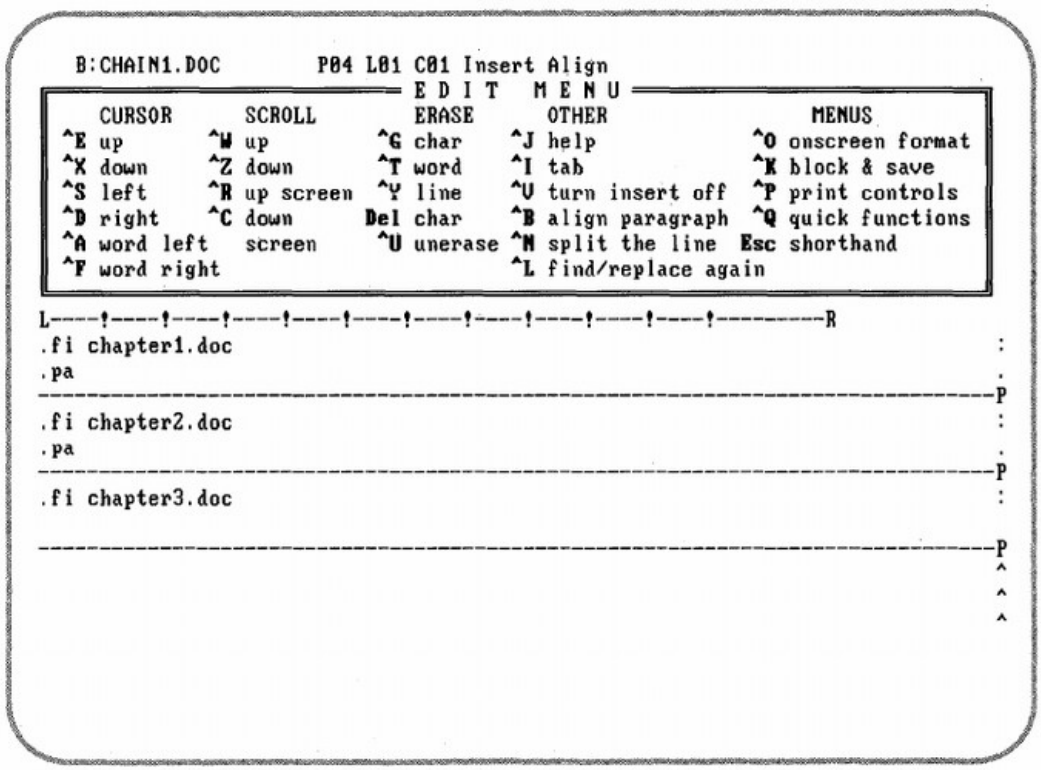
Creating a Command File

At the editing screen, you'll insert files into the command file with the **.FI** command. For a file to start on a separate page like the chapters in a book, you must insert a page break after each file.

Open a new document file and type the command file.

1. Unless you're continuing from Lesson 8, start up WordStar.
2. At the Opening Menu, open a new document named **CHAIN1.DOC**.
3. Starting in column 1, type **.fi chapter1.doc** ↵.
4. Type **.pa** ↵.
5. Type **.fi chapter2.doc** ↵.
6. Type **.pa** ↵.
7. Type **.fi chapter3.doc** ↵.

Here's how the command file should look.



Note: The colon (:) in the flag column following the **.FI** command indicates that the dot command is in effect only during printing. The files will not be inserted into the document on the disk.

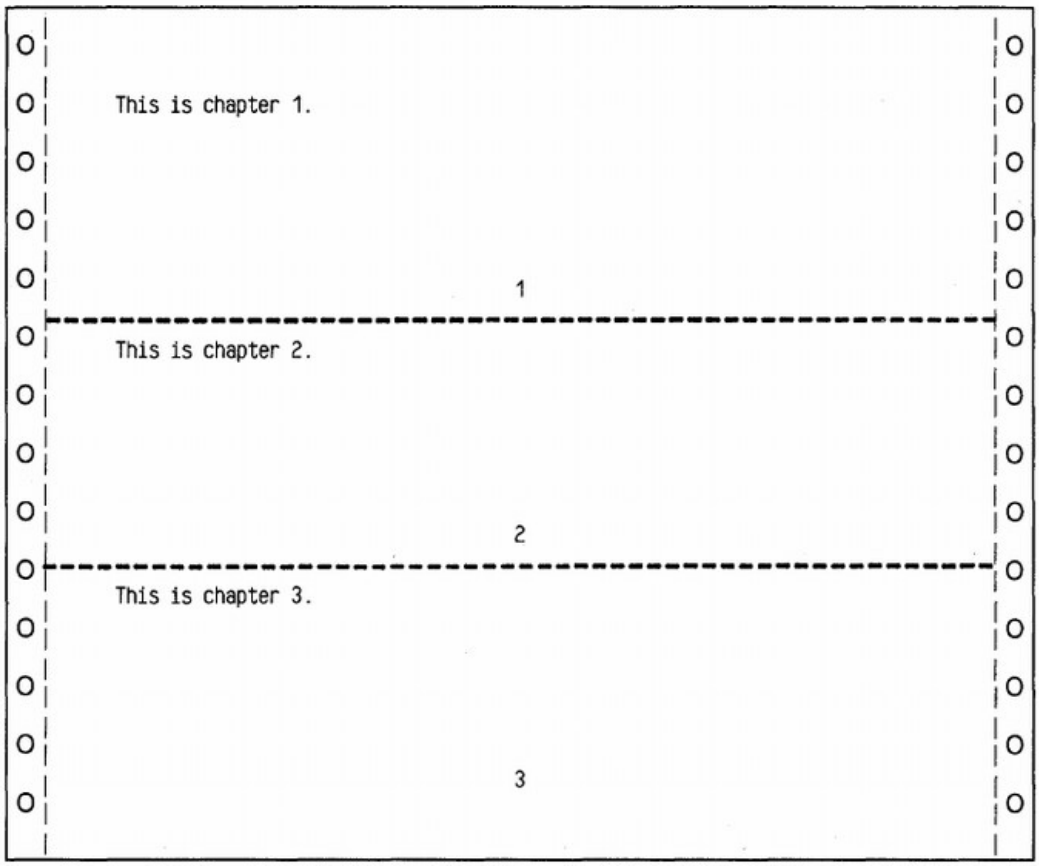
Saving and Printing

Save and print the command file.

1 Press **^KD** to save the file CHAIN1.DOC.

2 At the Opening Menu, choose **P** to print the file.

All three files will print one after the other with continuous page numbers every time you print CHAIN1.DOC. Compare your printout with the following sample:



Note: Another way to chain files is to put the **.FI** command at the ends of the files. For example, to connect Chapter 1 to Chapter 2, put **.FI CHAPTER2.DOC** ↵ at the end of the CHAPTER1.DOC file. If you want the next document to begin on a new page, use **.PA** to insert a page break just above the **.FI** command.

You'll find more information about chaining files under **Nesting and chaining** and **Command files** in the "Reference Guide."

Nesting Files

In nested printing, one file is inserted in the middle of another and another file within that one. In WordStar you can nest up to seven files in a document. A document inserted anywhere before the end of a file is considered nested.

Nesting is useful for printing boilerplate (frequently used and unchanged) paragraphs in different documents.

In this lesson, you'll nest these sample files:

SAMPLE1.DOC (an itinerary)
SAMPLE2.DOC (a list of excursions)
SAMPLE3.DOC (another excursion)

Nesting Once

Suppose you want to add a list of excursions to the itinerary. Insert SAMPLE2.DOC, the list of excursions, into SAMPLE1.DOC, the itinerary.

1 At the Opening Menu, open **SAMPLE1.DOC**, the itinerary.

2 Move the cursor to the blank line before the paragraph beginning with "Not included." Press ↵ to add another blank line.

3 Starting in column 1, type **.fi sample2.doc** ↵ to insert the excursions.

4 Press **^KD** to save **SAMPLE1.DOC**.

SAMPLE2.DOC will be nested in SAMPLE1.DOC during printing.

Nesting Twice

Because of a last-minute change, you need to add another excursion to the list you just inserted into the itinerary. The excursion is in a file named SAMPLE3.DOC.

All you have to do is insert SAMPLE3.DOC into SAMPLE2.DOC.

1 At the Opening Menu, open **SAMPLE2.DOC**, the list of excursions.

2 Move the cursor to the blank line between the second and third paragraphs and press ↵ to add another blank line.

3 Starting in column 1, type **.fi sample3.doc** ↵ to insert another excursion into the list of excursions.

4 Press **^KD** to save **SAMPLE2.DOC**.

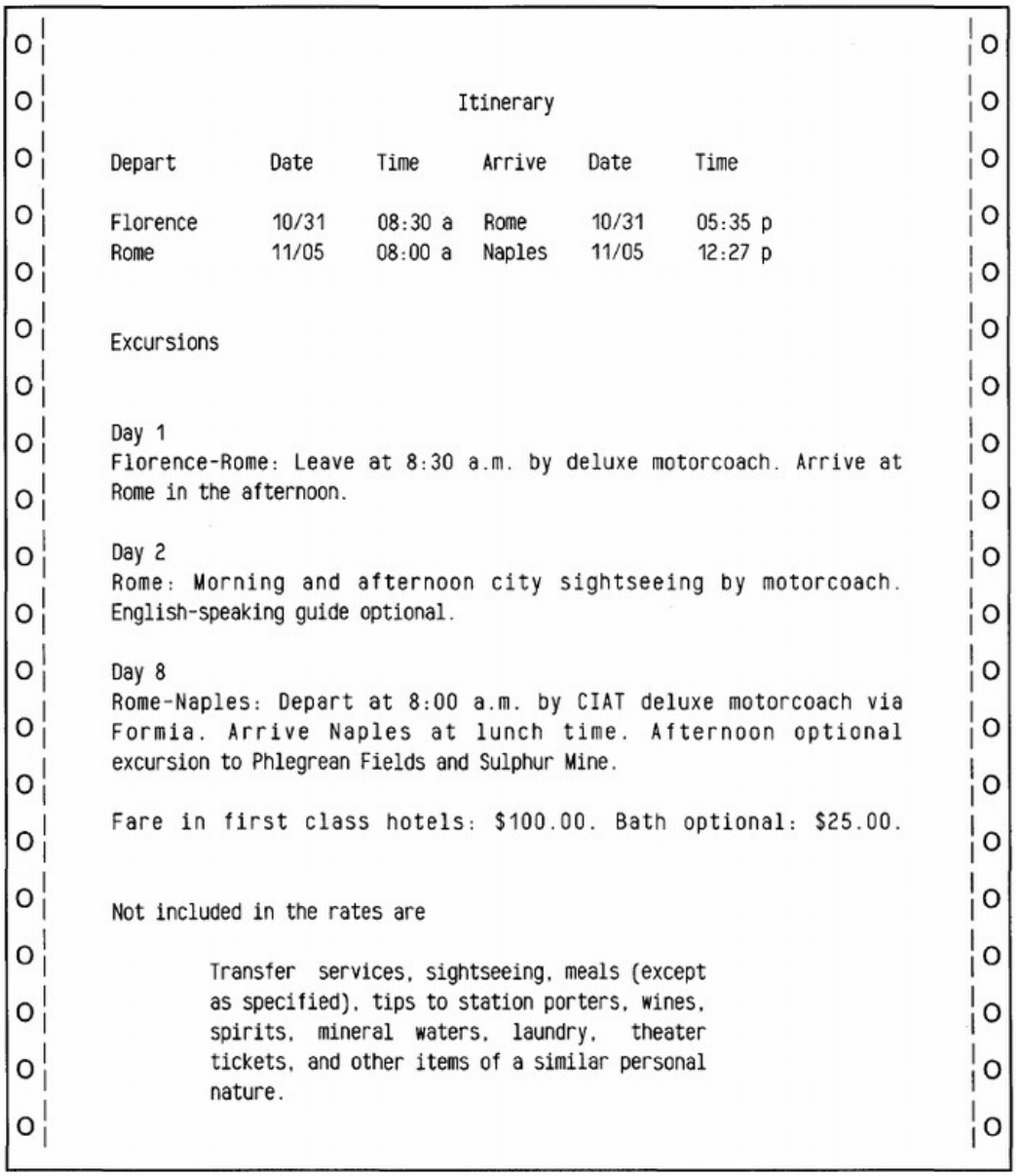
SAMPLE3.DOC will be nested in SAMPLE2.DOC during printing.

Printing the First Document

1 Make sure your printer is on and ready.

2 Print **SAMPLE1.DOC**.

When the itinerary prints it will include the two files with the excursions.



Itinerary

Depart	Date	Time	Arrive	Date	Time
Florence	10/31	08:30 a	Rome	10/31	05:35 p
Rome	11/05	08:00 a	Naples	11/05	12:27 p

Excursions

Day 1
Florence-Rome: Leave at 8:30 a.m. by deluxe motorcoach. Arrive at Rome in the afternoon.

Day 2
Rome: Morning and afternoon city sightseeing by motorcoach. English-speaking guide optional.

Day 8
Rome-Naples: Depart at 8:00 a.m. by CIAT deluxe motorcoach via Formia. Arrive Naples at lunch time. Afternoon optional excursion to Phlegrean Fields and Sulphur Mine.

Fare in first class hotels: $100.00. Bath optional: $25.00.

Not included in the rates are

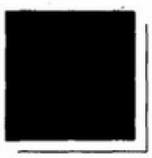
Transfer services, sightseeing, meals (except as specified), tips to station porters, wines, spirits, mineral waters, laundry, theater tickets, and other items of a similar personal nature.

Note: You can chain or nest a file on a disk in a different drive. You just type the disk drive letter, a colon, and the filename. For example, if you're working on drive B or C and the file to be chained or nested is on drive A, you should type **.FI A:SAMPLE4.DOC**. If you have a hard disk system and the file to be chained or nested is in a different directory, you must include the directory with the filename. For example, **.FI \BOOK\CHAPTER4.DOC**.

Review

In this lesson, you've learned two advanced printing techniques — chaining and nesting. With chaining and nesting you can combine files during printing rather than on disk.

The next lesson covers merge printing. You'll print personalized form letters with WordStar's merge print feature.



Lesson 10

Merge Printing

In this lesson, you'll learn about merge printing. You'll cover these subjects:

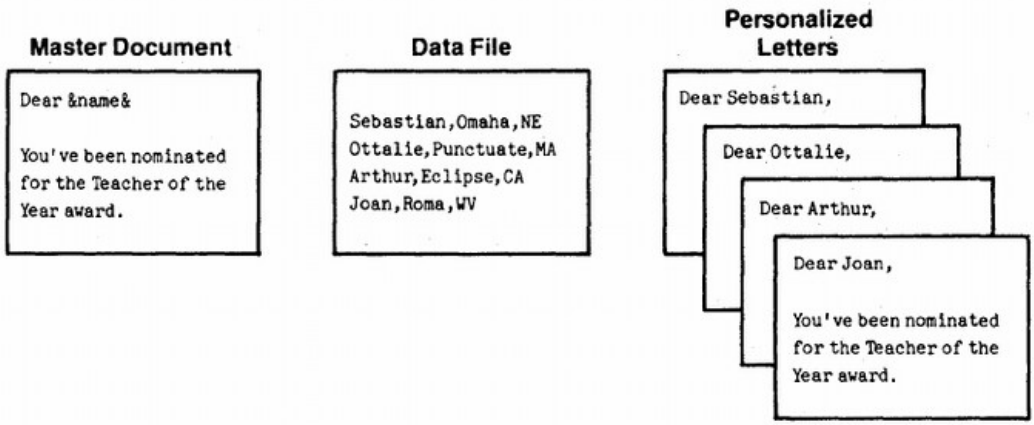
Creating a Mailing List
Creating a Master Document
Printing Form Letters
Creating Different Versions of a Form Letter

Merge printing is a WordStar feature that lets you perform sophisticated printing tasks. It's used most frequently to produce personalized form letters.

You produce form letters by merging information from two sources: a mailing list and a master document containing dot commands that link the two. During printing, information from the mailing list is inserted into the blanks in the master document.

Creating a Mailing List

Before you can print personalized form letters, you need a list of names and addresses. This list is kept in a file called a data file. During printing, the information from a data file is merged into a form letter.



First, you'll create a data file containing a mailing list. Here is an example of two records in a data file.

```
Arthur,Tuttle,Mr.,3090 Division St.,Eclipse,CA,99900      <
Sebastian,Hood,Mr.,1212 15th St.,Omaha,NE,50011           <
```

Notice that the data file has a special form.

- Each line (record) containing information about one person ends with a ←┘.
- Each item of information (field) in a record is separated by a comma.

Opening a Nondocument File

When you create a data file, you open a *nondocument* file. A nondocument file is simply a list of data.

1. Unless you're continuing from Lesson 9, start up WordStar.
2. At the Opening Menu, press **N** to open a nondocument file.
3. Name the new nondocument file **FORM1.DTA**. (It's a good idea to name your data files with a .DTA extension.)

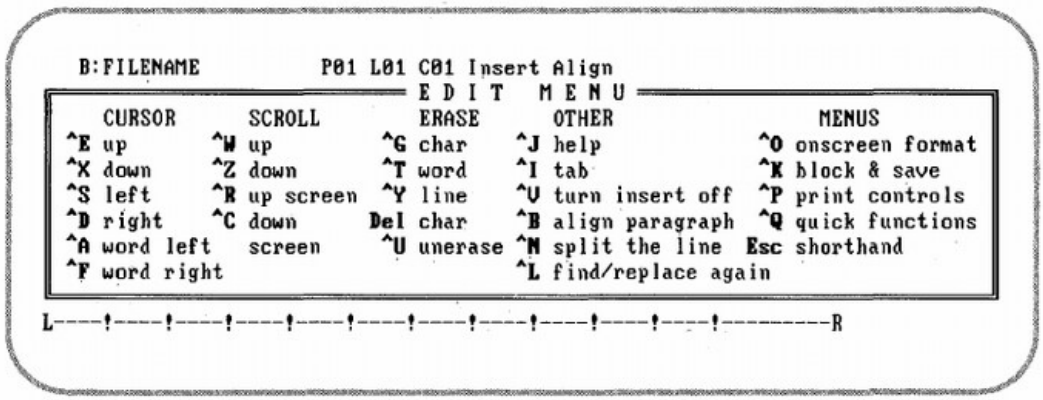
If the Nondocument Edit Menu is not displayed on your editing screen, set the help level to display all menus.

4 Press **^J^J3** ↵.

If you've worked with nondocument files before, you can go on to "Typing a Data File."

Typing a nondocument file differs from typing a document file. You end every line with a carriage return (↵) as if you were using an ordinary typewriter. Unless you press ↵, you can keep on typing on the same line and the editing window will move to the right.

The Nondocument Edit Menu differs from the Edit Menu. Before you type anything, compare the Nondocument Edit Menu on your screen with the Edit Menu shown below.



You'll notice some differences on your screen:

- The status line shows only the line and column where the cursor is located.
- The ruler line is omitted.
- The Onscreen Format Menu is not listed under MENUS.
- The command to align paragraphs (**^B**) is omitted.
- **^O** sets tab width. (WordStar sets the tab width at 8, but you can change the setting to 2, 4, 8, or 16.)

When you finish looking at the Nondocument Edit Menu, you can reset the help level to whatever level you prefer.

1 Press **^J^J**, type **3**, **2**, **1**, or **0**, and press ↵ to set the level.

Typing a Data File

You've already learned that a data file is typed in a special form, so that WordStar can recognize the data it contains and insert it correctly into the master document during printing. The guidelines below show the most common way to create data files. (See the "Reference Guide" for other ways to create data files.)

- Type each record (all the information about one person) on one line. The data file you'll type contains four records.
- Separate each field (item of information) by commas.
- Make sure each record contains the same number of fields for data. For example, you'll type nine fields in each record in the data file.
- Type the fields in each record in the same order, even if no information is available.
- If information is missing, type a comma anyway. For example, when you type Greg Hall's record, you'll notice that the title and company are empty fields. In Charlie Delta's record, the title field is empty.
- If a field includes a comma, for example, Tourist Trap, Inc., enclose the data in quotation marks ("). The quotation marks are not part of the data and will not be printed.
- If a field includes a quote within a quote, the inner quotation should have two sets of quotation marks, for example, "Al ""Scarface"" Capone."

Now, type the data file. You must be precise, typing every comma and ending each line with a ↵ exactly as shown.

1 Starting in column 1, type the data file.

```
Able,Baker,Mr.,"Manager, Acquisitions",THE GROCERY CHAIN,1234 Hackitt St.,Trusse,NJ,08055 ↵
Charlie,Delta,Mr.,,FARMER STORE,11 Stockyard Way.,Kansas City,MO,65412 ↵
Ellen,Fudge,Ms.,Junior Buyer,"Tourist Trap, Inc.",1100 Vine St.,Hollywood,CA,90023 ↵
Greg,Hall,Mr.,,,1234 Klamath Road,Portland,OR,97512 ↵
```

TIP *You'll save time if you plan your data file before you begin to type. Here's a trick to help you plan and type data files. Type a "dummy" record containing all the fields in the order you want. If*

the record you're typing has empty fields, you can use the dummy record as a guide to the correct order. If you forget to erase the dummy record when you're finished, it's all right. You can discard the personalized letter printed for your "dummy."

Saving the Data File

Proofread your data file and save it.

1 Press ^**KD** to save the data file **FORM1.DTA**.

Creating a Master Document

Once you have a data file with names and addresses, you can prepare a master document. A master document is simply the text of the letter and some dot commands. The master document always stays the same. It tells WordStar where to get information about each person on the mailing list and where to insert the information into the master document.

When you finish typing the master document, it will contain all the dot commands necessary to print a personalized letter for each person in your data file. It will look like the example on the following page.

```
.op
.df form1.dta
.rv fname,lname,mr-ms,title,company,address1,city,state,zip
.sv date=March 18, 1987
                              ACME WHOLESALERS
                            1600 Oak Grove Road
                          Concord, California 94520



&date&



&fname& &lname&
&title/o&
&company/o&
&address1&
&city&, &state& &zip&

Dear &mr-ms& &lname&:

I am an agent for a small, rural cooperative producing specialty
foodstuffs and craft items. Currently, the cooperative is
selling the most delicious honey I've ever tasted. To add a
touch of whimsy, the honey is packaged in a bear-like ceramic
pot.

Very soon, &mr-ms& &lname&, you'll receive a special sample in the
mail.

Please write to me if you'd like to order the honey. I'll be
happy to send you a catalogue featuring all our products.

Yours truly,


Bill Smith
Vice President, Marketing

.pa
```

Before you begin to type, look at the parts of the master document.

Dot Commands

The master document contains these dot commands:

Command	Function
.OP	Omits page numbers
.DF	Specifies which data file to use
.RV	Specifies what information to insert into the letters
.SV	Supplies specific information not included in the data file
.PA	Finishes the letter and starts a new page

Note: The **.DF** and **.RV** dot commands are always used together.

If you're not familiar with dot commands, see **Dot commands** in the "Reference Guide" before you continue. Make sure you always start a dot command in column 1. (You can type dot commands in either upper- or lowercase letters.)

Text Area

You type the letter like an ordinary letter but with one difference. You place ampersands (&) around words wherever you want WordStar to insert data that changes from letter to letter. The words inside the ampersands are called **variable names**. For example, fname and lname are variables to be replaced by a first and last name in each printed letter.

Opening a Document File

To build a master document, you begin just as you do for any other document, at the Opening Menu.

1 Press **D** to open a new document file.

2 Name the file **FORM1.LTR**.

Omitting Page Numbers

Turn off page numbering. Otherwise, WordStar will number each letter consecutively.

1 Type **.op** ↵.

Selecting A Data File

You must tell WordStar what mailing list to use to print your letters. Use the data file you just typed. (Remember, for your own work, you'll create your own data files.)

Name your data file.

1 Type **.df form1.dta** ↵

Supplying Variable Information

You must tell WordStar the names of the fields in your data file before WordStar can use the information. The data in these fields will replace the variable names enclosed in ampersands in the letter. Data is substituted for a variable name when the letter is printed.

You use the dot command **.RV** to name the fields in the data file. WordStar can then "read" the data in the data file and replace the variables in the text at print time.

Make sure you type the field names following the **.RV** command in exactly the same order as the fields in the data file. Every field in the data file must be represented, even if you don't plan to use them all in your letter. The field name actually means nothing to WordStar. *The position of the information in the data file record is what is important.*

Now type the field names exactly as shown.

1 Type **.rv**, press the **Spacebar** once, and then type

```
fname,lname,mr-ms,title,company,address1,city,state,zip ↵
```

Supplying Variable Information Not Included in the Mailing List

With each new mailing, you may want to change some information such as a date or signature.

The dot command **.SV** supplies specific data not included in the data file. In this master document, you can set today's date.

1 Type **.sv** and press the **Spacebar**.

2 Then type **date**, an equal sign (=), and today's date, for example, date=March 18, 1987 ↵.

TIP *If the correct date is displayed when you start up your computer, you can omit the* ***.SV*** *dot command and have your system supply the current date. Just type* ***&@&*** *(a system variable) where you want the date to appear in your master document. The system date will be substituted.*

Another dot command, **.AV**, allows you to make substitutions in your letter at print time, for example, to change a signature. The **.AV** command tells WordStar to pause during printing so you can add new information from the keyboard. See **Merge print dot commands** in the "Reference Guide" for details.

Typing the Text

Now that you've decided what list to use and have told WordStar where to find the information to be merged, you can type the letter. As you type, remember that each variable name to be replaced in the text area must be surrounded by ampersands (&). Variable names must be typed exactly like the field names following the **.RV** command (but not necessarily in the same order.) You don't have to use all the field names in the text. Put them only where you need information.

1 Type the letterhead. Press **^OC** to center each line before pressing ↵.

```
                    ACME WHOLESALERS ↵
                    1600 Oak Grove Road ↵
                    Concord, California 94520 ↵
↵
↵
↵
↵
```

2 Now type the rest of the letter. Notice that in the address, you'll type **/o** (the letter, not the number) following the TITLE and COMPANY variables. The **/o** prevents WordStar from leaving a blank line if no information is available in the data file.

Enclose the variable names in ampersands (&) where you want WordStar to insert the variable information from the data file. You won't need to add extra spaces, because WordStar automatically reformats the text during printing so that the data fits into the text.

```
&date& ↵
↵
↵
↵
↵
&fname& &lname& ↵
&title/o& ↵
&company/o& ↵
&address1& ↵
&city&, &state& &zip& ↵
↵
Dear &mr-ms& &lname&: ↵
↵
I am an agent for a small, rural cooperative producing specialty
foodstuffs and craft items. Currently, the cooperative is
selling the most delicious honey I've ever tasted. To add a
touch of whimsy, the honey is packaged in a bear-like ceramic
pot. ↵
↵
Very soon, &mr-ms& &lname&, you'll receive a special sample in the
mail. ↵
↵
Please write to me if you'd like to order the honey. I'll be
happy to send you a catalogue featuring all our products. ↵
↵
Yours truly,↵
↵
↵
Bill Smith ↵
Vice President, Marketing ↵
↵
.pa ↵
```

Note: WordStar automatically aligns paragraphs containing variables to the current margins. If you've set temporary indents or changed your margins with **^OL** or **^OR**, you'll need to set the margins for the paragraph with special dot commands. See the "Reference Guide" for details.

Proofread the letter and make corrections, if necessary. Make sure the master document ends with a page break (**.PA**) and a ↵, so that the next letter will start on a new page.

Check to make sure the document ends with a carriage return ↵.

1 Press ^QC to move the cursor to the end of the document. The cursor should be in column 1 on the line below the **.PA** command. If it's not, press ↵.

Saving the Master Document

Save the document.

1 Press ^KD to save the document.

Merge Printing

The command to merge print a document is found on the Opening Menu. Make sure your printer is on and ready.

1 Press **M** for merge printing.

2 Type **FORM1.LTR**, the name of the master document.

3 Press **Esc** to start printing.

The data file **FORM1.DTA** has four records. Your letter will print four times, once for each client in the file.

When the four letters have printed, compare them with the samples on the following pages. If your letters haven't printed correctly, reopen the master document and look for typing mistakes. Omitting an ampersand or typing information improperly in dot commands could have caused the problem. If the master document is correct, save it and open your data file. (Remember, a data file is a nondocument file.) Look for omitted commas. Make your corrections and print the letters again.

ACME WHOLESALERS
1600 Oak Grove Road
Concord, California 94520

March 18, 1987

Able Baker
Manager, Acquisitions
THE GROCERY CHAIN
1234 Hackitt St.
Trusse, NJ 08055

Dear Mr. Baker:

I am an agent for a small rural cooperative producing specialty foodstuffs and craft items. Currently, the cooperative is selling the most delicious honey I've ever tasted. To add a touch of whimsy, the honey is packaged in a bear-like ceramic pot.

Very soon, Mr. Baker, you'll receive a special sample in the mail.

Please write to me if you'd like to order the honey. I'll be happy to send you a catalogue featuring all our products.

Yours truly,

Bill Smith
Vice President, Marketing

ACME WHOLESALERS
1600 Oak Grove Road
Concord, California 94520

March 18, 1987

Charlie Delta
FARMER STORE
11 Stockyard Way
Kansas Way, MO 65412

Dear Mr. Delta:

I am an agent for a small rural cooperative producing specialty foodstuffs and craft items. Currently, the cooperative is selling the most delicious honey I've ever tasted. To add a touch of whimsy, the honey is packaged in a bear-like ceramic pot.

Very soon, Mr. Delta, you'll receive a special sample in the mail.

Please write to me if you'd like to order the honey. I'll be happy to send you a catalogue featuring all our products.

Yours truly,

Bill Smith
Vice President, Marketing

ACME WHOLESALERS
1600 Oak Grove Road
Concord, California 94520

March 18, 1987

Ellen Fudge
Junior Buyer
Tourist Trap, Inc.
1100 Vine St.
Hollywood, CA 90023

Dear Ms. Fudge:

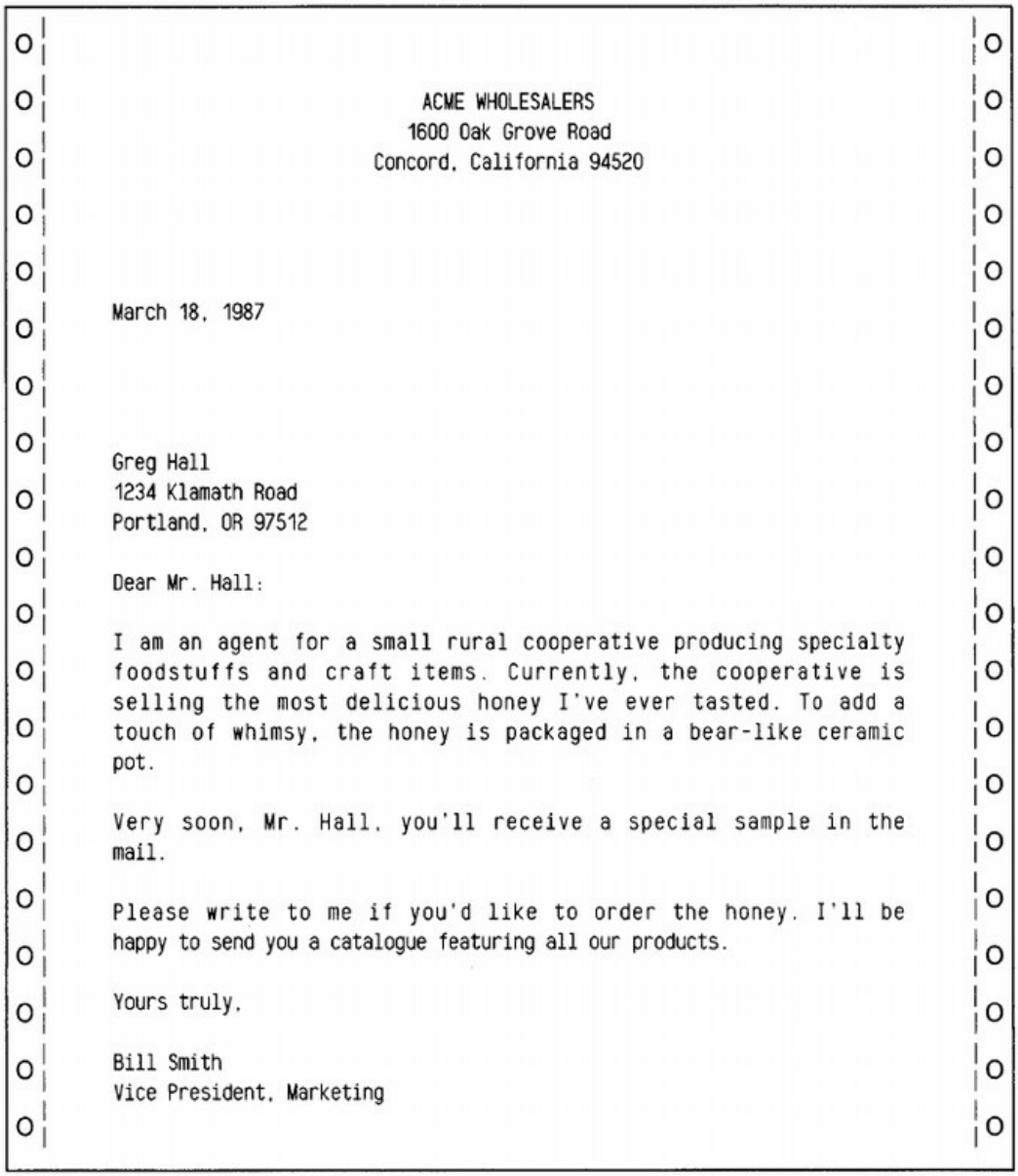
I am an agent for a small rural cooperative producing specialty foodstuffs and craft items. Currently, the cooperative is selling the most delicious honey I've ever tasted. To add a touch of whimsy, the honey is packaged in a bear-like ceramic pot.

Very soon, Ms. Fudge, you'll receive a special sample in the mail.

Please write to me if you'd like to order the honey. I'll be happy to send you a catalogue featuring all our products.

Yours truly,

Bill Smith
Vice President, Marketing



ACME WHOLESALERS
1600 Oak Grove Road
Concord, California 94520

March 18, 1987

Greg Hall
1234 Klamath Road
Portland, OR 97512

Dear Mr. Hall:

I am an agent for a small rural cooperative producing specialty foodstuffs and craft items. Currently, the cooperative is selling the most delicious honey I've ever tasted. To add a touch of whimsy, the honey is packaged in a bear-like ceramic pot.

Very soon, Mr. Hall, you'll receive a special sample in the mail.

Please write to me if you'd like to order the honey. I'll be happy to send you a catalogue featuring all our products.

Yours truly,

Bill Smith
Vice President, Marketing

Creating Different Versions of a Form Letter

You can set up instructions for printing different versions of a letter for different clients. You enter these instructions by putting **conditional** dot commands in your master document. WordStar tests the conditions set up in the dot commands and merge prints each letter accordingly.

Modifying the Letter for Selected Clients

Suppose your company wants to pay all shipping charges for West Coast customers and half the charges for all other customers. To inform your customers, you'll need two versions of the letter you just typed.

One version of the letter will contain this postscript for West Coast customers:

P.S. We'll gladly pay all shipping charges for your first order.

The other version will contain this postscript:

P.S. We'll gladly pay 50% of the shipping charges for your first order.

How will WordStar know which version of the letter to print for your customers?

With conditional dot commands in a document, WordStar can test data to see if a certain condition is true and then decide what to do.

Command	Function
.IF	Enters the condition and specifies what to print if the condition is true.
.EL	Specifies what to do if the condition is false.
.EI	Specifies the end of the condition and tells WordStar to resume regular printing.

Note: Every **.IF** command must have a matching **.EI** command.

Open the master document again.

1 At the Opening Menu, press **D** to open a document.

2 Choose **FORM1.LTR**.

Setting Up the Condition

You'll set up this condition for printing: If the zip code is greater than 89999 (for West Coast customers), print the text that follows. If not, skip the text and continue to the next **.EL** or **.EI** command.

Add the conditional dot commands to the master document.

1 Move the cursor to the blank line following "Vice President, Marketing." (If the Edit Menu is displayed, pressing the **PgDn** key four times will move the cursor close to the end of the letter.)

2 Press ↵ twice.

3 Starting in column 1, set up the condition with the conditional dot commands. (The #> sign in the **.IF** command means "is a number greater than.") Type the following condition:

```
.if &zip& #> 89999 ↵
P.S. We'll gladly pay all the shipping charges for your first order. ↵
↵
.el ↵
P.S. We'll gladly pay 50% of the shipping charges for your first
order. ↵
↵
.ei ↵
```

Other symbols can be used to compare numbers:

Symbol	Meaning
#=	is equal to
#<	is less than
#>	is greater than
#<>	is not equal to
#<=	is less than or equal to
#>=	is greater than or equal to

TIP *You can also set up conditions to compare words. For example, if you wanted to print a letter for everyone named Charlie in your data file, you would set up this condition:*

```
.IF &FNAME&=Charlie
.EL
.EI
```

Notice that the equal sign (=) isn't preceded by a number sign (#) when you set up a condition with words. See the "Reference Guide" for a complete list of symbols used with **.IF**.

Saving the Master Document

1 Press **^KD** to save FORM1.LTR.

Merge Printing the Letter

Print the letters just as you did in the previous exercise. Make sure your printer is on and ready.

1 At the Opening Menu, press **M**, type **form1.ltr**, and press **Esc**.

Compare your letters with the examples on the following pages. If they're not the same, reopen the master document and check the conditional dot commands. When you are satisfied that the master document is correct, merge print the letter again.

ACME WHOLESALERS
1600 Oak Grove Road
Concord, California 94520

March 18, 1987

Able Baker
Manager, Acquisitions
THE GROCERY CHAIN
1234 Hackitt St.
Trusse, NJ 08055

Dear Mr. Baker:

I am an agent for a small rural cooperative producing specialty foodstuffs and craft items. Currently, the cooperative is selling the most delicious honey I've ever tasted. To add a touch of whimsy, the honey is packaged in a bear-like ceramic pot.

Very soon, Mr. Baker, you'll receive a special sample in the mail.

Please write to me if you'd like to order the honey. I'll be happy to send you a catalogue featuring all our products.

Yours truly,

Bill Smith
Vice President, Marketing

P.S. We'll gladly pay 50% of the shipping charges for your first order.

ACME WHOLESALERS
1600 Oak Grove Road
Concord, California 94520

March 18, 1987

Charlie Delta
FARMER STORE
11 Stockyard Way
Kansas Way, MO 65412

Dear Mr. Delta:

I am an agent for a small rural cooperative producing specialty foodstuffs and craft items. Currently, the cooperative is selling the most delicious honey I've ever tasted. To add a touch of whimsy, the honey is packaged in a bear-like ceramic pot.

Very soon, Mr. Delta, you'll receive a special sample in the mail.

Please write to me if you'd like to order the honey. I'll be happy to send you a catalogue featuring all our products.

Yours truly,

Bill Smith
Vice President, Marketing

P.S. We'll gladly pay 50% of the shipping charges for your first order.

ACME WHOLESALERS
1600 Oak Grove Road
Concord, California 94520

March 18, 1987

Ellen Fudge
Junior Buyer
Tourist Trap, Inc.
1100 Vine St.
Hollywood, CA 90023

Dear Ms. Fudge:

I am an agent for a small rural cooperative producing specialty foodstuffs and craft items. Currently, the cooperative is selling the most delicious honey I've ever tasted. To add a touch of whimsy, the honey is packaged in a bear-like ceramic pot.

Very soon, Ms. Fudge, you'll receive a special sample in the mail.

Please write to me if you'd like to order the honey. I'll be happy to send you a catalogue featuring all our products.

Yours truly,

Bill Smith
Vice President, Marketing

P.S. We'll gladly pay all shipping charges for your first order

ACME WHOLESALERS
1600 Oak Grove Road
Concord, California 94520

March 18, 1987

Greg Hall
1234 Klamath Road
Portland, OR 97512

Dear Mr. Hall:

I am an agent for a small rural cooperative producing specialty foodstuffs and craft items. Currently, the cooperative is selling the most delicious honey I've ever tasted. To add a touch of whimsy, the honey is packaged in a bear-like ceramic pot.

Very soon, Mr. Hall, you'll receive a special sample in the mail.

Please write to me if you'd like to order the honey. I'll be happy to send you a catalogue featuring all our products.

Yours truly,

Bill Smith
Vice President, Marketing

P.S. We'll gladly pay all shipping charges for your first order.

You've created a data file and a master document and used merge printing to print form letters. You've also set special conditions for printing two versions of the same letter.

The "Reference Guide" has complete information about all the dot commands used in producing and formatting sophisticated documents for merge printing. If you want information about producing envelopes and one, two, or three labels at a time, see Appendix B, "WordStar Examples and Tips."

Reference Guide

The "Reference Guide" gives detailed explanations of WordStar's features, functions, and commands. Topics are presented in alphabetical order. The entry titles are functional. For example, you don't have to know that the commands for changing margins are in the Onscreen Format Menu. Simply look for **Margins**. If you don't immediately find the topic you are looking for, refer to the index.

A

Accent marks

Many non-English words have accent marks; for example, **écran** or **accès**. To print accent marks, use the **^PH** overprint command. **^PH** causes the printer to backspace one character and overprint the character. See **Overprinting**.

Aligning a paragraph

When you edit a document, you usually change the length of some of its lines. You then need to align the paragraphs to make the lines fit within the margins again.

To align a paragraph, use the **^B** command. Move the cursor to the first line of text that you want to align, then press **^B**. WordStar starts aligning at the left margin of the line. If you press **^B** when the cursor is to the left of the left margin (for example, if you entered the text with the margin farther to the left than the current margin), WordStar moves all text (including spaces) to the right of the cursor within the margins. If you are using a temporary indent (**^OG**), the temporary indent column is used as the left margin. WordStar stops aligning at the next hard carriage return (shown by the < flag at the right side of the screen).

To align text, WordStar compares the length of each line with the length of the ruler line. If a line is too long, words at the end are moved to the next line. If a line is too short, words from the next line are moved up. With hyphen help on (**^OH**), you can also hyphenate words while you're aligning. See **Hyphenation**.

> ***TIP*** *Use the **^PO** command to create a binding space when you don't want WordStar to split phrases during aligning. A phrase that uses binding spaces instead of normal spaces is treated as one word. See **Binding space**.*

You can align more than one paragraph or even a whole document by using the **^QU** command. **^QU** aligns a paragraph, pauses briefly at the hard carriage return, then continues to align each paragraph until the end of the document. You can stop aligning by pressing **^U**.

When aligning a whole document, you can mark certain sections of text, such as tables or charts, that you do not want to align. Type the dot command **.AW off** on the line just above where you want aligning to stop. Type **.AW on** on the line before you want aligning to resume.

Notice that during normal editing, the word **Align** appears in the status line. After you enter the **.AW off** command, **Align** disappears when the cursor is in the portion of the text that will not be aligned.

> ***TIP*** *You can use the **.PF** command to align text at print time. This command is mostly used with merge printing but can also be used with regular printing. See **Merge printing**.*

You can also align paragraphs automatically after substitutions during find and replace operations by using the **A** option on the Find and Replace screen. See **Finding and replacing**.

Alternate type

See **Pitch**.

ASCII

ASCII is short for American Standard Code for Information Interchange. It is a standard format that lets different types of computers interpret information in the same way.

WordStar nondocument files are ASCII files. Document files are not ASCII, but you can convert them to ASCII in either of two ways:

- Edit the document in nondocument mode. Use **^B** or **^QU** to zero the eighth bit throughout the file. This method leaves the print control characters in the file.
- Print the file to disk. At the Opening Menu, press **P** (or **M** if the file contains variables) to print. At the last print option, **Name of printer?**, select ASCII. After ASCII, type the > symbol and the name you want to give the ASCII file. For example:

  Name of printer? **ASCII>LETTER.ASC**

  If you don't type a filename, the file is named ASCII.WS. This method removes control characters from the file. See also **Printing to disk**.

Auto indent

Auto indent is available only in nondocument mode. As lines are typed, this feature indents them automatically. Auto indent is especially useful for programming in languages such as PL/1, Pascal, and C, since the common practice in structured programming techniques is to indent the same amount for each level of nesting.

To turn auto indent on, use the **^6** command. Hold down **Ctrl** and type the number **6**. (Use the number key above the letter keys; do not use the number on the numeric keypad.) When auto indent is on, **Auto-In** appears in the status line. Then, press the **Tab** key, **^I**, or the **Spacebar** to move the cursor to the column to which you want subsequent lines to be indented. Begin typing. Each time you enter a carriage return, WordStar begins the next line at the column you chose.

To increase the amount of the indent, add blanks or tabs at the beginning of the line where you want the increased indent. To decrease indenting, erase blanks and tabs. WordStar indents the next line with exactly the same number of tabs and spaces as the previous line.

To turn auto indent off, press **^6** again. The **Auto-In** disappears from the status line.

Background printing

See **Printing a file**.

Backspace key

See **Keyboard**.

Backup files

Each time you save a file, WordStar automatically saves the previous version of the file. This "backup" file appears in your directory with the same filename as the original file but with the .BAK filename extension.

The first time you save a new file, you have only one version of the file. The next time you use **^KS**, **^KD**, or **^KX** to save the file, the earlier version becomes the backup file.

The .BAK files protect your work; if your working file is damaged, you can use the backup version. WordStar doesn't allow you to edit a .BAK file, but you can view it in Protected Mode. See **Protecting a file**. To edit a .BAK file, you must first rename it with a different extension. See **Renaming a file**.

> ***TIP*** *Saving your work while you're editing by pressing* ***^KS*** *takes only moments and protects the work you're editing from power failures and other problems.*

It's also a good idea to make additional backup copies of your files on separate disks. See also **Copying** and "If You're New to Computers" in "Learning" for more information on copying files and disks.

Bidirectional printing

Many printers can print lines while the printing element is moving to the left and to the right. On some daisy-wheel printers, you can turn bidirectional printing off to improve print quality, or on to speed up printing.

The default setting for bidirectional print is on. You can change this default with WSCHANGE. See Appendix C, "Customizing WordStar." You can also turn bidirectional printing on or off inside a document using the **.BP on** and **.BP off** dot commands.

> ***TIP*** ***.BP 0*** *(zero) is the same as* ***.BP off;*** ***.BP 1*** *(one) is the same as* ***.BP on.***

Binding space

The binding space command (**^PO**) keeps two words together as you align a paragraph. To insert a binding space between two words in your text, press **^PO** instead of putting a space between the words. On the screen, the binding space is displayed as **^O.** The two words are treated as one word during aligning. **^PO** keeps the words together regardless of whether justification is on or off. See also **Aligning a paragraph**.

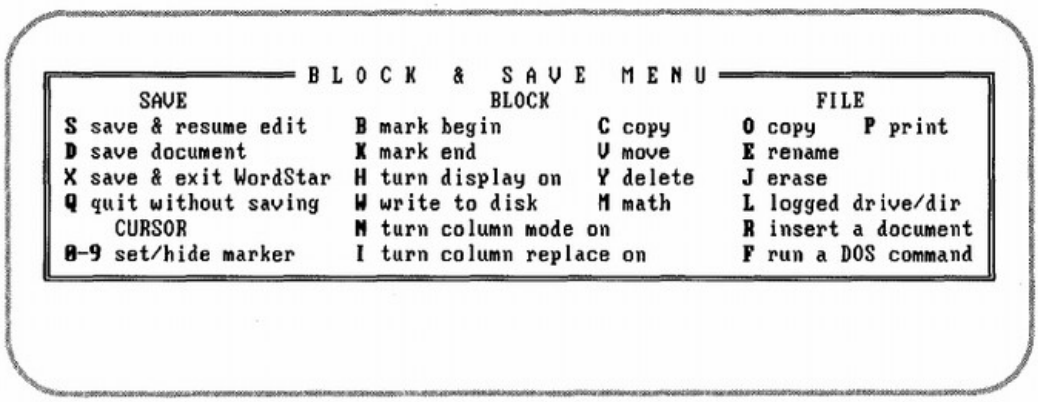
Blank lines

To insert a blank line in your text, move the cursor to column 1 where you want the blank line and press ↵. The hard carriage return symbol (<) appears in the flag column, and the cursor goes to the beginning of the next line. (Insert must be on for the ↵ key to insert a blank line. Check your status line. You can turn insert on and off using **^V** or the **Ins** key.) You can also press **^N** to insert a blank line and leave the cursor at its original position.

If the text is single-spaced, ↵ creates one blank line. If it's double-spaced (using the **^OS** or **.LS** command), ↵ creates two blank lines (but one has a soft carriage return at the end).

Block & Save Menu

This menu contains file and block commands that you can use while you're editing. The commands are grouped under three headings, **SAVE**, **BLOCK**, and **FILE**.



To see the Block & Save Menu, press **^K**. You can choose any of the commands on the menu by pressing the corresponding key. To cancel the menu without choosing a command, press the **Spacebar**.

WordStar displays the menu only if the help level is set to **2** or **3**. You don't need to see the menu in order to use its commands. Just enter the three keystrokes quickly and the menu doesn't appear. If the help level is set to **0** or **1**, the menu does not appear.

SAVE commands instruct WordStar to store the current file on a disk. See **Saving a file**.

BLOCK commands allow you to do cut-and-paste editing. See **Blocks**, **Block math**, **Column blocks**, and **Place markers**.

FILE commands allow you to do basic operations on files other than the one you're currently working on. You can erase or move files from your disk when it doesn't have enough disk space to save the document you're currently working on. See **Copying**, **Deleting text**, **File operations**, **Logged drive and directory**, **Printing a file**, **Renaming a file**, and **Running a DOS command**.

Block math

WordStar can total the numbers in a marked block, even if the block has words in it. You can use block math with regular blocks and column blocks. First mark the block. Then press **^KM.** WordStar displays the total at the top of the screen. Press **Esc** to return to editing.

You can press **Esc** and then = (or **Esc $** for dollar amounts) to insert the result of the last math total in your document. See also **Shorthand**.

WordStar uses the following rules to determine whether digits it encounters in a marked block are part of a number:

- A number is any set of digits (the characters 0–9) surrounded by nondigits (any other characters).
- A hyphen in front of a digit is considered a minus sign.
- A period is considered a decimal point when the character immediately after it is a digit.
- The letter "e" surrounded by digits is considered scientific notation (for example, "2e25" means 2×10^{25}).
- The maximum number of digits in a number is 30.
- A number within parentheses is considered negative.

Numbers in dot command lines are ignored.

Answers have a maximum precision of twelve digits. If the answer is longer, WordStar gives the closest answer it can, using scientific notation.

See also **Blocks** and **Column blocks**.

Blocks

A block is text that you mark so you can do something with it, such as delete it, move it, or copy it. It can be one character, a phrase, or pages long. The maximum block size depends on your computer. When you reach it, WordStar displays a warning.

To create a block, mark its beginning (^**KB**) and end (^**KK**). You can then perform block operations, which include copying (^**KC**), deleting (^**KY**), and moving the block within the document (^**KV**). You can also create a new file containing a block of text (^**KW**) and read another file into the one you're editing (^**KR**).

> ***TIP*** *Operations with two or more small blocks can be faster than with one large block. The distance involved in block operations can also affect the speed of the operations. For example, when moving a block a distance of 25 pages, writing the block to a new file (^**KW**), then reading in the file at the new location (^**KR**), may be faster than moving the block (^**KV**).*

In addition to blocks of normal text, you can also work with column blocks. In a column block, the beginning marker marks not only the top of the block, but the left side of the block as well. The end marker marks the

right side of the block, as well as the bottom. In other words, the markers mark the upper left and lower right corners of the block. Column blocks are useful for tables and charts. The **^KN** command turns column mode on and off. See **Column blocks**.

Block markers

When you mark a block with **^KB** and **^KK**, the markers **<B>** and **<K>** appear at the beginning and end of the block. Only one beginning marker and one end marker can exist at a time. On most screens, the text between the markers is highlighted. When the text is highlighted, the markers are not displayed, but the **B** and **K** flags appear in the flag columns of the lines containing the beginning and end of the block. If the end marker is before the beginning marker, the markers appear but no block is marked.

If the last line in a block is a complete line ending with a carriage return, you can include the carriage return in the block by placing the end marker at the beginning of the next line.

To move a marker (and change the beginning or end of the block), move the cursor to the new location and reenter the begin block or end block command.

To erase a marker, enter the same marker command with the cursor immediately to the right of the marker.

To hide a block (or a marker), press **^KH**. Using **^KH** again will redisplay them. If you hide a block or a marker, and then use **^KB** or **^KK** to mark a new block, WordStar automatically turns the marker display back on.

To move the cursor to the beginning marker, press **^QB**. To move to the end marker, press **^QK**.

Block markers are automatically deleted from a file when you leave it.

Block commands

Block commands are located on the **Block & Save Menu**.

Command	Function
^KB	Marks the beginning of a block.
^KK	Marks the end of a block.

^KH Hides the block markers (and block highlighting) on the screen. Press **^KH** again to make them reappear. At help levels **2** and **3**, hiding the markers is also a safety measure. At these levels, WordStar won't move, copy, erase, or write blocks when the markers are hidden.

^KC Copies a block to the current cursor position.

^KV Moves a block to the current cursor position.

^KY Deletes a block. The cursor doesn't have to be anywhere near the block. After deleting, the cursor is where the block used to be. You can restore an erased block using **^U**. See **Undo and unerase**.

^KW Stores (writes) the block on a new file on the disk. WordStar asks for the name of the file to write the block to. If the file already exists, WordStar warns you and asks if you want the existing file to be replaced with the new block. The original block also remains in your working file.

^KR Inserts (reads) a file into the document you're currently editing. Use this command to insert standardized text or any other document.

You can also use **^KR** to insert a copy of the current file into itself. The inserted text is the original version of the document before you started editing, or the version you saved with the most recent **^KS** command.

^KN Turns column mode on or off, allowing you to work with column blocks.

^KI Turns column replace on or off, changing the way column blocks are handled. Column replace works only if column mode is on.

^KM Totals the numbers in the block and displays the result. You can then insert the result into the document by pressing **Esc** and then =. See **Shorthand**.

^K' Converts all uppercase characters in the block to lowercase. See **Case conversion**.

Command	Function
^K"	Converts all lowercase characters in the block to uppercase. See **Case conversion**.

To move a block from one document to another, first store the block in its own file, using **^KW**. Then open the second document and insert the block file, using **^KR**.

See also **Block & Save Menu**, **Block math**, **Column blocks**, and **Place markers**.

Boldface

To emphasize text (as in **this example**), place the cursor where you want the boldfacing to start and press **^PB**. The symbol **^B** appears on your screen but is not counted as a character space in the status line. Any text after the **^B** is highlighted on the screen and new text you type is highlighted.

To stop boldfacing, move the cursor to where you want boldfacing to end, and press **^PB** again. The highlighting also stops. The printer will boldface the highlighted text.

To delete boldfacing, place the cursor on the **^B** and press **Del** or **^G**. Be sure to remove both the beginning and end boldface markers.

See also **Double strike**.

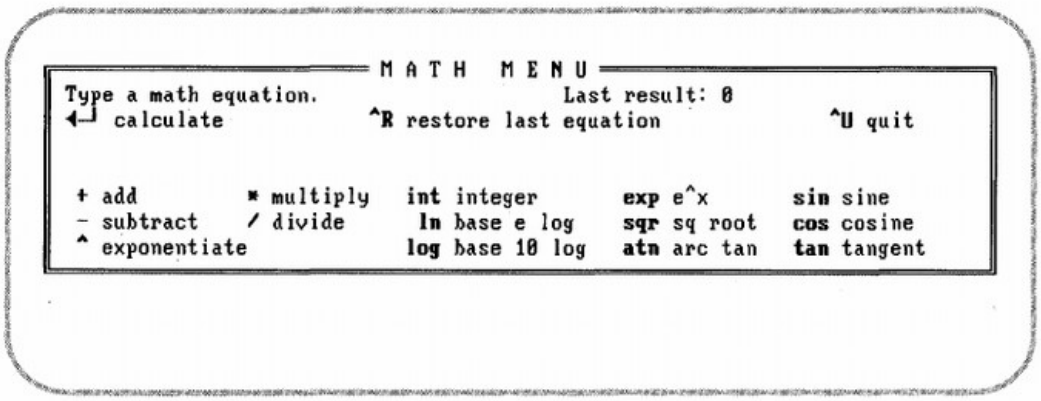
Boxes

See **Drawing**.

C

Calculator

To use the onscreen calculator while you are editing, press **^QM**. WordStar displays the Math Menu.



Type the equation you want to solve and press ↵. WordStar displays the answer.

When you're done with the calculator, press **^U** (or ↵ if there is no equation), and WordStar returns you to editing.

At the Math Menu, you can use **^R** to reenter the previous equation. You can then edit the equation and recalculate it.

The Math Menu provides all the usual mathematical operations: addition, subtraction, division, multiplication, and exponentiation. It also provides natural and common logarithms, square root, integer, and the trigonometric functions sine, cosine, tangent, and arctangent, which work with angles in degrees. WordStar's notation is similar to that used in the BASIC programming language.

For example, to find the sine of 45 degrees, type **sin(45)**.

Equations are normally evaluated from left to right, except that exponentiation takes precedence over multiplication and division, which take precedence over addition and subtraction. You can change the order in which WordStar performs operations by using parentheses to enclose operations that are to be done first. Be sure to use parentheses in pairs. For example:

500*.001*(((.001+1)^180)/(((.001+1)^180)-1))

WordStar always performs the operation within the innermost set of parentheses first. WordStar uses its normal order of precedence when performing the operations within parentheses. The nesting limit (that is, the number of parentheses within parentheses) is 32; however, the equation can become too complicated for WordStar before that level is reached. If an equation is too complicated, an error message appears.

You can use scientific notation to enter a long number. For example, 1.23e25 represents the number 12300000000000000000000000. Answers have a maximum precision of 12 digits. If an answer is longer, WordStar gives the closest answer it can, using scientific notation. The largest number WordStar can work with is 1e63. The smallest number is 1e–63, which is written out as a decimal point followed by 62 zeros, then a 1. (WordStar uses 14-digit BCD floating-point math internally.)

After you return to editing, you can enter the result of the last calculation (or the last equation) into your text at the cursor position with one of the three shorthand commands described below.

Command	Function
Esc =	Enters the number result of the last calculation.
Esc $	Enters the number result formatted as a dollar amount; for example, 12345 would change to 123.45. (You can use WSCHANGE to change the format of the number displayed for **ESC $**. See Appendix C, "Customizing WordStar.")
Esc #	Enters the last equation.

Canceling a command

See **Undo and unerase**.

Caps Lock key

Press the **Caps Lock** key to type text in capital letters. Press the key again to return to lowercase. The **Caps Lock** key affects only the alphabetical keys on the keyboard. It does not affect the number keys or symbol keys.

Carriage return

See **Enter key**.

Case conversion

You can convert all the uppercase letters in a block to lowercase, and vice versa. First mark the block. To convert to uppercase, press **^K"**. To convert to lowercase, press **^K'**. Do not hold down the **Ctrl** key when you press " or ' . See also **Blocks**.

Centering text

To center a line of text, place the cursor anywhere on the line and press ^OC. WordStar centers all the characters on the line between the current margin settings. Spaces before or after the text are ignored.

If you add or delete characters on a centered line, use ^OC again to center the changed line.

If you later want to align a centered line on the left margin, move the cursor to column 1 on the line and press ^T.

You can also center data during merge printing by using a special formatting command. See **Merge printing variable formatting**.

Chaining files

See **Nesting and chaining**.

Character width

On most printers, each character, including blank spaces, takes up the same amount of horizontal space, or width. Character width is measured in units of 1/120 inch.

In WordStar, the default character width is 12/120 inch. To change character width, use the dot command **.CW** followed by the new width in 120ths of an inch. For example, the 12/120 inch default is written as **.CW 12**. This is 10 characters per inch, which is normal pitch for pica type.

Character width has a direct effect on the number of characters you can fit into a line. Large numbers in the **.CW** command spread characters out, and small numbers squeeze characters together. The following table shows several settings for the **.CW** command, the resulting number of characters per inch, and the widest right margin you can use with the width on 8½-inch-wide paper.

Dot Command	Characters/Inch	Right Margin
.CW 5	24	156
.CW 6	20	130
.CW 8	15	97
.CW 10	12	78
.CW 12	10	65
.CW 15	8	52
.CW 20	6	39
.CW 24	5	32

WordStar also has a default alternate pitch of 12 characters per inch, which corresponds to **.CW 10** and is the normal pitch for elite type. You can use the **^PA** command to select the alternate pitch while editing and the **^PN** command to return to the normal pitch. The **.CW** command works independently for normal and alternate pitches. For example, if you press **^PA**, then below it type **.CW 15**, the alternate pitch character width changes to 15. The character width for the normal pitch is unaffected, so if you then press **^PN**, the character width returns to 12/120 inch (10 characters per inch). See also **Pitch**.

When you use proportional spacing, characters do not all have the same width. For right-justified text, WordStar uses the character width value to determine the length of a line by multiplying the character width by the right margin number. WordStar then uses the most appropriate proportionally spaced font available and allocates the white space between words as evenly as possible. If words appear too far apart or too close together in proportionally spaced text, try using a **.CW** value one or two units smaller or greater, respectively. See also **Proportional spacing**.

Clearing the screen

Although it happens rarely, something like electrical interference or a message from the operating system can cause extra characters to be displayed on your screen. They're not actually in the file—they're only onscreen. To clear the screen and redisplay everything correctly, press **^**. You can use **^** either while editing or at the Opening Menu.

Color

If you have a color monitor, you can change the WordStar colors that appear on your screen with the WSCHANGE program. See Appendix C, "Customizing WordStar."

If you have a printer with a two-color ribbon, you can select the second color with the **^PY** command. Place the cursor where you want the second color to start and press **^PY**. The symbol **^Y** appears on your screen. To stop the second color, move the cursor to where you want to return to the first color and press **^PY** again.

To delete the symbol for the second color, place the cursor on the **^Y** and press **Del** or **^G**. Be sure to remove both the beginning and end markers.

On some printers, **^PY** selects the italics font. See also **Italics**.

Column blocks

In column mode, you can perform block operations with column blocks, as opposed to regular blocks. For column blocks, the beginning and end block markers define the top left and bottom right corners of the block. You would use column mode, for example, to switch two columns of information in a table.

A dot command is not considered to be a part of a column block. If you move or delete a column block, a dot command surrounded by the block remains at its original location.

When working with column blocks, use the regular block commands for your block operations. The commands used for column blocks are described below.

Command	Function
^KN	Turns column mode on and off. If there are block markers in the text, the display changes automatically to show the new mode. When column mode is on, the word **Column** appears in the status line.
^KI	Turns column replace on and off. Column replace is effective only when column mode is on. When column replace and column mode are both on, **ColRepl** appears in the status line. When column replace is on, a moved, copied, or inserted block replaces any text at the cursor. If a block is moved or deleted, spaces replace the block at its original location, leaving a "hole." If column replace is off, a moved, copied, or inserted block pushes over any text at its new location. For a moved or deleted block, surrounding text fills in the space that was originally occupied by the block.
^KB	Marks the top left corner of a column block.
^KK	Marks the bottom right corner of a column block.

Command	Function
	TIP *If your text contains print control characters (such as* ***^B*** *for bold), it may be difficult to see that the end block marker is in the proper place to include all the columns you intend. To make sure your block is complete, you can turn off the display of print controls with* ***^OD*** *after you place the end marker. If the last character in a column block is a print control character, place the cursor directly after the control character before entering* ***^KK****.*
^KC	Copies a column block. If column replace is on, the copy replaces any text already at the cursor. If column replace is off, the copy pushes any text already at the cursor to the right.
^KY	Deletes a column block. The cursor does not have to be anywhere near the block. If column replace is on, the deleted block is replaced with spaces, leaving a "hole" where the block was. If column replace is off, any text that was to the right of the block moves to the left. After the deletion, the cursor returns to where the deleted block was. You can unerase the deletion with **^U**.
^KV	Moves a column block. If column replace is on, the column block replaces any text already at the cursor. The original block is replaced with spaces, leaving a "hole" in the text. If column replace is off, the moved block is inserted, and any text already at the cursor is moved to the right. The original block is erased. Any text to the right of the original location of the block moves to the left.
^KW	Writes a block to another file. (This command works the same with column blocks as with regular blocks.)
^KR	Inserts (reads) a file into the document you're working on. When column replace is on, each line of the file being read replaces a line (or part of a line) in the file being edited, starting at the cursor position. If column replace is off, each line is inserted into the file being edited, starting at the cursor position. Any text already at the cursor is moved to the right.

CAUTION *In column mode, WordStar expects the file being read to be a column (that is, it inserts the file one line at a time, and it expects all the lines to be the same length). If a line in the block is not the same length as the previous lines, WordStar stops and warns you. You then have three options: continue with the insertion, stop the insertion at the current line, or stop the insertion and mark the text it has already read in as a column block, so that you can delete it easily with* ***^KY****.*

^U Unerases a block. When column replace is on, you can use **^U** to restore any text that was replaced by the block most recently moved, copied, or inserted. For example, you might move a column and intend to insert it but forget that column replace is on. The moved block replaces any text at the cursor. You can type **^U** to restore the text overwritten by the block.

CAUTION *When you delete text that's too long to fit in the unerase buffer, WordStar usually displays a warning message and gives you a chance to cancel the command. If a block that is erased during a column replace operation is too long, no message appears and you can lose text. See also* ***Undo and unerase****.*

Columns

A column is a vertical arrangement of text, as opposed to normal text, which is a horizontal arrangement.

Before you enter columns of text, set tab stops where each column of text is to begin. (WordStar's default tabs are set every five spaces. You can remove a tab using **^ON** and set a new tab using **^OI**, or use **.RR** to change them all at once.) Use either **^I** or the **Tab** key to move the cursor to the beginning of each column before starting to type.

CAUTION *If word wrap is on, be careful not to type beyond the right margin. Otherwise, characters in your right column may wrap to the next line when you don't want them to. You can use* ***^OX*** *to release the margins or* ***^OW*** *to turn word wrap off, or* ***.AW off*** *and* ***.AW on*** *to turn word wrap and aligning off and back on.*

If insert is on, tabbing "pushes" characters to the right. If insert is off, tabbing passes over the characters without erasing them.

If you're typing columns of numbers, you probably want to set decimal tabs for each column. Decimal tabs align all the numbers by their decimal points.

> ***TIP*** *If you change pitch within a table, the columns may not line up on paper the way they do on the screen, because normal and alternate pitch have different character widths. For example, column 11 of the default normal pitch is one inch from the left margin, but column 11 of the default alternate pitch is 5/6 inch from the left margin. You can use the* ***^P@*** *command to make sure the columns line up.*
>
> *For each column of your table, use* ***^P@*** *on each line that is in alternate pitch. Place the cursor in the column where you want the text to start and press* ***^P@****.* ***^@*** *appears on the screen (it won't be printed). Then type the text. When you print, WordStar multiplies the character width of the normal pitch by the onscreen column number to determine where to begin printing.*
>
> *This command is also useful for lining up proportionally spaced columns. See also* ***Proportional spacing****.*
>
> ***TIP*** *When you proofread columns, it helps to turn off the display of print control characters using* ***^OD****. Or you can use* ***^OP*** *to turn off even the display of dot commands.*

See also **Column blocks**, **Decimal tabs**, and **Tab stops**.

Command files

A command file is a file that contains only dot commands. Command files can be very useful for merge printing and for chaining files. The most commonly used commands in command files are the merge print dot commands, the commands that display messages while you print, and the **.FI**, or insert a file, command.

The example below is a sample command file for chain printing several files and displaying messages as you print.

```
.FI cover.let
.DM The letter is printed . . .
.FI proposal.doc
.DM The proposal is printed . . .
.FI spec.doc
.DM The specification is printed. Printing is finished.
```

You can select **P** or **M** at the Opening Menu or **^KP** while editing to print a command file. Use **M** if any of the files to print contain variables for merge printing. The actual command file is not printed because it has nothing in it but dot commands.

If your command file includes messages to be displayed while printing, you can see them only from the Printing screen. As soon as the file starts to print, press **P** (or **^KP**) to display the Printing screen.

The next example shows a command file that first prints form letters from a master document, then prints envelopes or labels from another master document. Each time you run the command file, you can choose the master documents to use. You must use **M** to print this file because it contains variables and it includes master documents that contain variables.

```
.DM This command file prints letters, then envelopes.
.AV "Master document to use for letters?  ", LETTER
.FI &LETTER&
.DM Last letter is printed . . .
.AV "Master document to use for envelopes/labels?  ", ENVELOPE
.FI &ENVELOPE&
```

Using **.AV** in a command file saves you time while printing. If you instead put the **.AV** in the master document, WordStar will prompt you for information each time a letter is printed. If you have a large data file, this can be time-consuming. With a command file, you enter the information only once, no matter how many records are in your data file.

For example, you could have an invoice form document that contains the variable **&DATE-SENT&**. If you always print a batch of invoices for all merchandise sent on one day, you could use the following command file as an alternative to putting the **.SV** command in the document and changing it each time you print.

```
.AV "What date was the merchandise sent?  ", DATE-SENT
.FI invoice.doc
```

See also **Dot commands**, **Merge printing**, **Messages while printing**, and **Nesting and chaining**.

Comment lines

In a document, you can enter comments and instructions that appear on the screen but are not printed. These unprinted comments are useful for writing notes to yourself describing such things as what print wheel to put in the printer, when the document was created, who processed it, and what page formatting commands were used.

To insert a comment line in your document, type either **..** or **.IG** followed by the text of the comment.

You can put a comment line anywhere in your file. Word wrap doesn't affect dot commands, so you can make the line as long as you want. If you need more than one line for your comment, repeat the comment dot command at the beginning of each line. See also **Dot commands**.

Control key

The key labeled **Ctrl** on your keyboard is used with other keys to form WordStar commands. On menus and in documentation, the control key is shown by the caret symbol (^).

When you hold down **Ctrl** and press another key, a "control character" is produced. A control character commands WordStar to do something, such as move the cursor or print text in boldface. Some control characters are represented on the screen with two symbols; for example, when you press **^PB** for boldface, it appears on the screen as **^B**. Others are not shown on the screen at all.

Control characters themselves are never printed, so WordStar doesn't count them as taking up space on a line of text. Lines with control characters in them appear longer on the screen than they are when printed. The **^OD** command turns the display of control characters on and off.

See also **Cursor keys**, **Cursor movement and scrolling**, and Appendix G, "Command Summary," for information on all the commands you can form with the control key.

Copying

You can copy blocks of text and files. Copying makes an exact duplicate of whatever is being copied; the original is preserved, not erased.

Copying a file

To copy a file, use the **O** command at the Opening Menu or **^KO** while you're editing a document. WordStar asks you for the name of the document to copy. Type the name and press ↵. WordStar asks you for the name for the new copy. Type the name and press ↵.

Unless you specify otherwise, WordStar assumes the file you name to be copied is on the current drive and directory. You can copy a file that is on another drive or directory by typing the path with the filename. You can also put the copy on another drive or directory by typing the path with the filename.

You can use the same filename if you copy from one drive or directory to another. But you cannot have two files with the same name in the same directory.

If the filename you give for the new copy already exists, WordStar asks if you want to replace the old file with the new copy. If you answer **Y**, WordStar deletes the old file and replaces it with the new file. If you answer **N**, WordStar does not copy the file. You can start again and use a different filename.

Copying a block

To copy a block within a document, use the **^KC** command. To copy a block from a document into a separate file, use the **^KW** command.

See also **Blocks**.

Creating a document or nondocument

To create a document, press **D** at the Opening Menu. You can also create a nondocument (a program or data file) by pressing **N** at the Opening Menu. The following explanation applies to both documents and nondocuments.

When you give a name for the document, WordStar looks for it in the current directory. If it's not there, at help level **2** or **3**, WordStar asks, **Create a new one?** WordStar doesn't assume you want to create a new document, since there's a chance you mistyped the name of an existing one or the file is on another disk or directory. (At help level **0** or **1**, WordStar opens a new document without asking.)

When you open a new document, it's blank. You can begin typing or insert other documents.

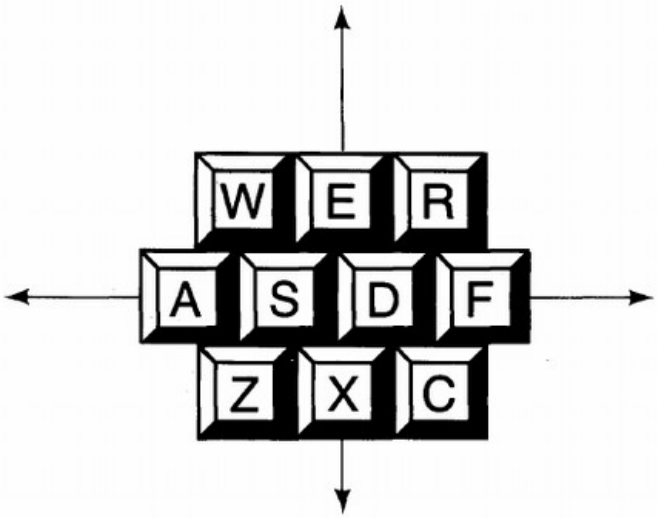
See also **Documents and nondocuments**.

Cursor

The cursor is a small blinking rectangle or line on the screen that marks your place. Whatever you type appears where the cursor is.

Cursor diamond

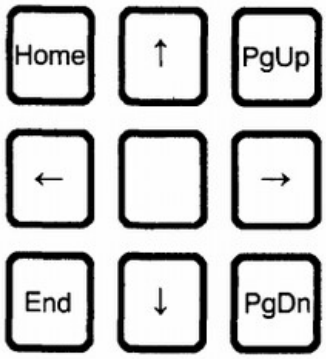
The four basic keys that are used with the **Ctrl** key as commands to move the cursor up one line (^**E**), left one character (^**S**), right one character (^**D**), and down one line (^**X**) form a diamond on the keyboard. The keys used with the **Ctrl** key as extended movement commands radiate out from the center of the diamond, as shown in the following illustration.



See also **Cursor keys** and **Cursor movement and scrolling**.

Cursor keys

The cursor keys are used to move the cursor. Depending on your keyboard, they may be located on the numeric keypad (as shown below) or at another location on the keyboard.



TIP *If the cursor keys on the numeric keypad don't work, press the* ***Num Lock*** *key. The* ***Num Lock*** *key switches between the cursor movement commands and the numbers on the keys.*

Most of the cursor keys work one way when pressed alone and another way when pressed together with the **Ctrl** key. Each cursor key command can also be entered using the cursor control commands on the cursor diamond. The chart below shows all the cursor key commands, their functions, and the corresponding cursor control commands.

Cursor Key	Where the Cursor Moves	Control Command
Home	Column 1 in first onscreen line	^QE
^Home	Beginning of file	^QR
↑	Up one line	^E
Page Up	Previous screen	^R
^Page Up	Scroll up	^W
←	Left one character	^S
^←	Left one word	^A
→	Right one character	^D
^→	Right one word	^F
End	Right end of last onscreen line	^QX
^End	End of file	^QC
↓	Down one line	^X
Page Down	Next screen	^C
^Page Down	Scroll down	^Z

See also **Cursor diamond** and **Cursor movement and scrolling**.

Cursor movement and scrolling

When you're editing, you can use the cursor keys and cursor control commands to move the cursor and to scroll the text. The cursor commands are based on the four directions (up, left, right, and down) of movement on the screen. Moving the cursor does not change the text in any way.

The cursor cannot move into parts of the screen where you haven't already typed a character (a blank space you enter with the **Spacebar** is considered a character). If you try to move the cursor to such a place, it "jumps" to another place.

For example, if the cursor is at the end of a line of text, and you use **^X** to move the cursor down, it usually doesn't go straight down. Instead, it moves to the end of text on the lower line, because that's usually as far to the right as you've typed.

Before using **^X**:

This is one line of text on the screen._
This is another line.

After using **^X**:

This is one line of text on the screen.
This is another line._

You can use the cursor control commands combined with **^Q** for quick movement and scrolling.

The chart below describes all commands used for cursor movement and scrolling, including the **^Q** quick movement commands.

To Move	Press
Up:	
one line	**^E** (or ↑)
to col. 1 in first onscreen line	**^QE** (or **Home**)
one line (scroll up)	**^W** (or **^PgUp**)
line-by-line to beginning of file	**^QW**
to previous screen	**^R** (or **PgUp**)
directly to beginning of file	**^QR** (or **^Home**)
screen-by-screen to beginning of file	**^Q^R**
Left:	
one character	**^S** (or ←)
one word	**^A** (or **^**←)
to column 1 of current line	**^QS**
Right:	
one character	**^D** (or →)
one word	**^F** (or **^**→)
to end of current line	**^QD**
Down:	
one line	**^X** (or ↓)
to last onscreen line	**^QX** (or **End**)
one line (scroll down)	**^Z** (or **^PgDn**)
line-by-line to end of file	**^QZ**
to next screen	**^C** (or **PgDn**)
directly to end of file	**^QC** (or **^End**)
screen-by-screen to end of file	**^Q^C**
Other:	
to marker (previously set)	**^Q 0–9**
to beginning of marked block	**^QB**
to end of marked block	**^QK**
to page (number)	**^QI(*n*)**
to previous position	**^QP**
to last block location or find string	**^QV**
to specified letter (forward)	**^QG**
to specified letter (backward)	**^QH**

Customizing WordStar

Many users find that once they've installed WordStar for their monitor and printer, no further customizing is needed. However, if you want to change WordStar's defaults to better suit your needs, use the

WSCHANGE program. The menus in WSCHANGE allow you to change a number of settings easily. For example, you might want to change WordStar so that justification is normally off instead of on, or you might want to change the default left or right margin.

WSCHANGE has a feature called the auto patcher that lets you save all or any portion of the settings you've customized so that you can easily transfer them to a fresh copy of WordStar. If you make extensive customizations, it can be very convenient to use the auto patcher so that you don't have to reenter all of your changes in WSCHANGE.

See Appendix C, "Customizing WordStar."

Custom print controls

Four custom print control commands, **^PQ**, **^PW**, **^PE**, and **^PR**, allow you to control special features of a printer, such as double-width printing, that are not controlled by any of the other print control commands.

You can define each custom print control with a string of up to 24 characters (or longer with additional patching). When WordStar encounters the print control in the text, it sends your string to the printer. There are two ways to define the custom print controls: by using WSCHANGE or by using dot commands.

There are four dot commands for defining custom print controls: **.XQ**, **.XW**, **.XE**, and **.XR**. Each **.X** dot command defines the corresponding **^P** custom print control command. Each custom print control dot command is followed by up to 24 hexadecimal character codes.

For example, double-width printing on an Epson-compatible printer is turned on by sending the "ESC" character followed by the "SO" character. These characters in hex are 1B and 0E, respectively. Therefore, to define **^PQ** to turn on double-width printing, you would type

.XQ 1B 0E

The "DC4" character, 14 hex, turns off double-width printing. To define **^PW** to turn it off, you would type

.XW 14

To print a title in double-wide letters, you would type

^PQTitle^PW

The title would then be printed double-wide on the printer.

Note: When you use WSCHANGE to define these strings, you must also include a "length byte," which indicates how many characters are to be sent to the printer. When using the dot commands, you don't include the length byte; WordStar just counts the hex pairs on the dot command line.

If no hex code is entered with a dot command, the corresponding print control is disabled. You can redefine the print controls as many times as you wish. The dot commands override custom print control strings installed using WSCHANGE. However, when WordStar begins printing the next document, any values in the user area are restored.

When you use custom print controls, keep these points in mind:

- Control codes for different brands and models of printers are usually different. Therefore, custom print controls that work on one printer may not work properly on another.
- Margins do not come out even with the rest of the page if you embed double-width or condensed text within a line of regular text.
- Don't use the custom print controls for standard print features like bold and underscore. The printer drivers automatically send the proper strings to control these printing functions for the specified printer. Attempting to use custom print controls for functions the driver is already controlling may not give the desired results.
- There may be interactions between the print controls you are using and the printer driver. In fact, the driver may inadvertently cancel your print control. If you need more control over your printer than the custom print controls allow, you can experiment with the CUSTOM and SIMPLE printer drivers.

See also **Dot commands**, **Printer drivers**, and Appendix C, "Customizing WordStar."

D

Data files

A data file is a nondocument file that holds information to be "merged" into a document using merge printing. For example, you can merge data from a mailing list into a form letter.

A data file consists of a series of records. Each record consists of several fields, or items of information. For example, a mailing list has one record for each person, and each record has a field for name, a field for address, and fields for city, state, and ZIP code.

To create a data file, press **N** at the Opening Menu to open a nondocument file. Then type your information.

Make sure that the fields are in the same order in all records. Separate fields with commas or carriage returns. If the contents of a field includes a comma, enclose the entire field in quotation marks. If a field is empty (you have no information for it in this record), indicate the blank field with a comma. You can enter blank spaces at the beginning and end of any fields if you want; they will be ignored when you use the data file for merge printing.

> ***CAUTION*** *The rules above are very important. If you enter any records incorrectly, you will not be able to merge print correctly.*

The example below shows a data file with three records. Each record has seven fields: last name, first name, first address line, second address line, city, state, and ZIP code. Note that in the first and second records, the blank second address line is shown with commas, and in the second record, the first name field is enclosed in quotation marks because it contains commas.

> **Weiss, Steven, 702 Rosemund Place, , Sebastopol, CA, 95472**
> **Praskin, "Alan, Laurie, & Elena", 25 Oak St., , Salem, MA, 01976**
> **Jaffe, Joe, 1120 25th Ave., Suite 155, San Diego, CA, 90010**

If the contents of a field include both a comma and quotation marks, you can use apostrophes to enclose the field. For example:

> **' John "Bud" Moore, Jr. '**

If you want, you can select another character, such as the asterisk (*), to use instead of the comma as the data separator character. You can choose the default data separator for all data files using WSCHANGE. You can also use the **.DF** command. Before you use **.DF**, create the data file using the data separator character you want. Then use **.DF** in the document file you are using with the data file for merge printing. Normally **.DF** is followed by the filename. If the file uses a different data separator than the default, follow the filename with a comma and the data separator character. In the example below, the data file MAILING.LST uses the / character as the data separator.

.DF MAILING.LST, /

The rules given above for commas apply to any data separator character.

See also **Merge printing**.

Decimal tabs

A decimal tab stop allows you to vertically align the decimal points in a column of numbers. The example below shows a column aligned using a decimal tab.

1234.56
$432,697.33
.99-
1.414679
3,419,733.00CR

To set a decimal tab stop, type a # in a **.RR** ruler line. To clear one, replace the # with a hyphen. The example below shows decimal tabs set at columns 20 and 40, and regular tabs at columns 10 and 30.

.RR------!---------#---------!---------#-----R

You can also use the **^OI** command to set a decimal tab stop temporarily and **^ON** to clear one. With either of these commands, you must precede the column number for the tab with a number sign (#) to distinguish it from a regular tab stop.

When you use **^I** or **Tab** to move the cursor to a decimal tab stop, the word **Decimal** appears in the status line. Each number (or other character, including spaces) that you type is inserted to the left of the cursor until you type a decimal point. When you type a decimal point, **Decimal** disappears from the status line, and characters you type are added to the screen as they normally are.

In order for decimal tabs to work properly, there must be adequate space to the left of the cursor. Each time you type a character, WordStar removes one blank space to the left. When no blank spaces remain, the decimal tab function is turned off.

See also **Ruler lines** and **Tab stops**.

Defaults

Every option in WordStar has a preset, or default, setting. You can leave the defaults as they are, change them temporarily, or change them permanently.

You can change many defaults temporarily while editing by using control commands. For example, the default for justification is on. When you use **^OJ** to change it, it remains off until you exit from the document.

You can use dot commands to change many defaults within a document. For example, the default setting for page offset is 8 spaces from the left edge of the paper. If you want to use 20 spaces instead, you can type **.PO 20** to change it for the current document only.

You can use WSCHANGE to permanently change the default settings for many options. See Appendix C, "Customizing WordStar."

Delays

In WordStar, a delay is a pause before carrying out an instruction. WordStar uses delays for your convenience. For example, when you're editing, you may notice a one-second delay between pressing **^Q**, **^P**, **^O**, **^K**, or **Esc** and the appearance of the corresponding menu. This delay allows you to press the other key in the command, so WordStar can perform the command without displaying the menu.

You can change the length of the delays with WSCHANGE. See Appendix C, "Customizing WordStar." Note that setting the delays to zero slows down WordStar because all menus will be displayed no matter how fast you type.

Delete key

The Delete key is marked **Del** on most keyboards. Press **Del** to delete the character at the cursor position. Hold down **Del** if you want to delete multiple characters.

After you delete characters to the end of a line, pressing **Del** deletes the carriage return. The next line jumps up to the cursor and you continue to delete the characters in the new line.

Deleting text

The chart below shows all the commands for deleting text.

To delete a	Follow these instructions
character, space, or print control at cursor	Press ^**G** or **Del**.
previous character, space, or print control	Press ^**H** or **Backspace**.
word, defined as beginning at cursor and ending at the next space or punctuation mark: . , : ; ! or ?	Place cursor on first character to delete and press ^**T**.
carriage return	Place cursor at end of line and press ^**G**, ^**T**, or **Del**.
line, blank line, or dot command line	Press ^**Y**.
line right of cursor	Press ^**QY**.
line left of cursor	Press ^**Q Del**.
from cursor to specific character	Press ^**QT** and type the character.
sentence	Press ^**QT** and type a period as the character.
paragraph	Press ^**QT** and press ↵ for the character.
page or text block	Mark beginning (^**KB**) and end (^**KK**), then press ^**KY**.
file	At Opening Menu, press **Y**; while editing, press ^**KJ**.

> ***TIP*** *If you prefer to use the* ***Del*** *key to delete the previous character, as it works in older versions of WordStar, you can change its function using WSCHANGE. You can also change the* ***Backspace*** *key to move left without deleting. See Appendix C, "Customizing WordStar."*

When you delete a file, you can use the * wild-card character to delete several files at once. You can also use the **?** wild-card character unless you have DOS 2.1, which doesn't recognize it.

You can use **^U** to restore the last text deleted except for single characters. See **Undo and unerase**.

Directories

A DOS directory is an area of a disk that you can create for storing files.

The directory display is a list of the files and subdirectories on a disk or in a directory. At the WordStar Opening Menu, the directory display shows the files and subdirectories on the logged drive or in the logged directory. Filenames are displayed in alphabetical order. To the left of each filename is the number of kilobytes the file takes up. Subdirectories are displayed above the filenames. To the left of each subdirectory is a backslash (\). If there are more files and subdirectories than can be displayed at one time, you can scroll the list using **^W** and **^Z**.

If you have more files than WordStar's directory storage area can hold (370), three dots (. . .) appear as the last item in the directory display.

Sorting the filenames in alphabetical order can take several seconds. If you like, you can use WSCHANGE to permanently turn the sorting off.

Some files shouldn't be edited with a word processing program. These include command files (with the **.COM** or **.EXE** extension), program overlay files (**.OVR**), and temporary files (**$?$**, where **?** can be any character). WordStar does not list files with these extensions in its directory display even though the files are on the disk. You can change the filename extensions to be excluded using WSCHANGE. See Appendix C, "Customizing WordStar."

You can press **F** at the Opening Menu to turn the directory display on and off. When you turn the display on, WordStar asks for a file specification for the directory display. You can use a "wild-card" file specification to display only certain filenames. For example, **X*.LTR** displays only filenames that begin with X and have the .LTR extension.

If you are editing and want to see the directory display, press **^KO** or **^KE**.

If you press **^KL** to change the logged drive or directory, the directory display changes to show the files on the new logged drive and directory.

See also **Logged drive and directory**, **Paths**, and Appendix E, "Making the Best Use of Directories and Memory."

Documents and nondocuments

Document files are usually text files, such as letters, memos, reports, or chapters in a book. Nondocument files are ASCII files, such as data files or computer programs.

When you work with documents, you can use all of WordStar's word processing capabilities, such as aligning, word wrap, and justification. With nondocuments, you cannot use many of these word processing features.

To open a document, type **D** at the Opening Menu; to open a nondocument, type **N**.

You can edit a nondocument file as a document, and vice versa.

To convert a nondocument to a document, reopen it as a document (use **D**, instead of **N**). To make paragraphs, change the hard carriage returns at the ends of the lines to soft returns (with **^6**), and then align the entire file (with **^QU**).

The differences between documents and nondocuments are described below.

Menus Documents have the standard menus. Nondocuments have a modified Edit Menu and no Onscreen Format Menu. In the nondocument Edit Menu, the **^O** command sets tab width rather than starting the onscreen format commands, and the **^6** command turns auto indent on and off rather than changing hard carriage returns to soft returns.

Formatting Documents can be formatted with the Onscreen Format Menu functions. The following functions are not available for nondocuments: centering, hyphen help, justification, line spacing, margins, ruler line, soft hyphen, and word wrap.

Tab Stops Document tab stops are initially set every 5 spaces, but you can reset them anywhere on the ruler line. **^OI** or **.RR** sets the stops and **^ON** clears them. Tabs in nondocuments usually use a special tab character and are customarily set every 8 spaces; you can use **^O** to reset them only to every 1, 2, 4, or 16 spaces. You can also use WSCHANGE to set nondocument mode to use regular tab stops.

Cursor Indicator In documents, the indicator on the status line shows **P**age, **L**ine, and **C**olumn. In nondocuments, the indicator shows only **L**ine and **C**olumn.

Dot Commands WordStar checks dot commands in documents and displays the results in the flag column. WordStar does not check dot commands in nondocuments.

Embedded Information WordStar embeds printing-related information in documents. Since character codes require only 7 bits, WordStar uses the eighth bit to convey this information. The eighth bit is ignored in nondocuments. The **^B** command zeros any eighth bits set in a line of a nondocument (**^QU** zeros eighth bits for an entire nondocument.)

Other Differences **^B** and **^QU** are used to align paragraphs in documents. They remove the most significant bit from characters in nondocuments. **^QI** finds a page number in documents; it finds a line number in nondocuments.

Dot commands

Dot commands perform a variety of functions, mostly related to printing. They are also used for merge printing and indexing. You can enter a dot command on any line in a document. Type a period (dot) in column 1 and follow it with the two-character command code and any other information that goes with it. (WordStar doesn't distinguish between uppercase and lowercase letters in dot commands.) Press ↵ to end the line. The line remains in your file but does not appear in the printout.

> ***TIP*** *To print a file with all the dot commands, print it as a nondocument. See* ***Printing a file****.*

> ***CAUTION*** *A dot command must start in column 1. Don't put a dot command in the middle of a paragraph. If the paragraph gets aligned during editing or merge printing, the dot command may become part of the paragraph, thus losing its intended effect.*

When you type a period in column 1, a question mark appears in the flag column. This is replaced by a colon, period, or 1 as soon as you type the second letter of the command. If you mistakenly type an invalid dot command, the question mark stays, but the line still isn't printed.

For some dot commands, the two-character command code is all that's needed. Others require that you enter additional information, which is generally one of three types: text, a number, or **on** or **off**. You can put a space between the command code and the other information, but it isn't required. Numbers must be whole numbers; you can't use decimal points or fractions. If you don't enter a number where a number is required, zero is used. Where on or off is required, you can also use **1** for on and **0** for off.

In a header or footer line, if you put more than one space between the dot command and the text, the extra spaces will appear in the header or footer.

Appendix B, "WordStar Examples and Tips," and the lessons in "Learning" give examples of how dot commands work. Appendix G, "Command Summary," provides a quick reference to the dot commands.

The lists below show each dot command with the type of additional information required (if any), a brief description of the command's function, and the "Reference Guide" heading where you can find more detailed information. The commands are grouped by function.

Print formatting dot commands

These dot commands affect the printout but have no effect onscreen. WordStar flags these commands with a colon (:) in the flag column.

Command	Additional Information	Function
.BN	*number*	Selects a sheet feeder bin number, 1 through 4. See **Sheet feeders**.
.BP	on/off	Turns bidirectional print on and off. See **Bidirectional printing**.
.CW	*number*	Sets character width, in 120ths of an inch. See **Character width**.
.FO	*text*	Gives the text for the first line of a footer. See **Footers and headers**.
.F1	*text*	Same as **.FO**.

Command	Additional Information	Function
.F2	*text*	Gives the text for the second line of a footer. See **Footers and headers**.
.F3	*text*	Gives the text for the third line of a footer. See **Footers and headers**.
.FI	*filename*	Inserts the named file while printing. See **Nesting and chaining**.
.FM	*number*	Sets a footer margin, in lines. See **Footers and headers**.
.HE	*text*	Gives the text for the first line of a header. See **Footers and headers**.
.H1	*text*	Same as **.HE**.
.H2	*text*	Gives the text for the second line of a header. See **Footers and headers**.
.H3	*text*	Gives the text for the third line of a header. See **Footers and headers**.
.HM	*number*	Sets a header margin in lines. See **Footers and headers**.
.LQ	on/off	Turns near letter quality printing on and off. See **Near letter quality printing**.
.OP		Turns off page number printing. See **Page numbers**.
.PC	*number*	Specifies a column number in which to print page numbers. See **Page numbers**.
.PG		Turns on page number printing when it was turned off. See **Page numbers**.
.PO	*number*	Sets the page offset in number of spaces from left edge. See **Margins**.

.PS	on/off	Turns proportional spacing on and off. See **Proportional spacing**.
.SR	*number*	Sets a subscript/superscript roll in 48ths of an inch. See **Subscript and superscript**.
.UJ	on/off/dis	Turns microjustification on and off or leaves it to the discretion of the printer driver. See **Microjustification**.
.UL	on/off	Turns underlining of spaces on and off. See **Underlining**.
.XE	*text*	Defines the custom print control turned on and off with **^PE**. See **Custom print controls**.
.XL	*text*	Defines the form feed string. See **Form feeds**.
.XQ	*text*	Defines the custom print control turned on and off with **^PQ**. See **Custom print controls**.
.XR	*text*	Defines the custom print control turned on and off with **^PR**. See **Custom print controls**.
.XW	*text*	Defines the custom print control turned on and off with **^PW**. See **Custom print controls**.

Onscreen formatting dot commands

These dot commands affect both the onscreen display and the printout. WordStar flags these commands with either a period or a **1**. The **1** means the dot command is most effective if it's placed at the top of the page.

Command	Additional Information	Function
..	*text*	Enters a comment line. See **Comment lines**.
.AW	on/off	Turns word wrap and aligning on and off. See **Aligning a paragraph** and **Word wrap**.

Command	Additional Information	Function
.CP	*number*	Sets a conditional page break, which keeps the specified number of lines on the same page. See **Page breaks**.
.IG	*text*	Enters a comment line. See **Comment lines**.
.LH	*number*	Sets the line height in 48ths of an inch. See **Line height**.
.LM	*number*	Sets a new column number for the left margin. See **Margins**.
.LS	*number*	Sets line spacing. See **Line spacing**.
.MB	*number*	Sets the bottom margin, in lines. See **Margins**.
.MT	*number*	Sets the top margin, in lines. See **Margins**.
.OJ	on/off	Turns right justification on and off. See **Justification**.
.PA		Inserts a page break. See **Page breaks**.
.PL	*number*	Sets a page length, in lines. See **Page length**.
.PM	*number*	Sets a paragraph margin. See **Paragraph margins**.
.PN	*number*	Changes the page numbering, using the specified number for the current page. See **Page numbers**.
.RM	*number*	Sets a new column number for the right margin. See **Margins**.
.RR	*text*	Enters an embedded ruler line. See **Ruler lines**.

WordStar keeps track of the dot commands that affect the margins and page length so that as you move through the document, it can change the margins accordingly. WordStar sets aside 500 bytes of memory to store these dot commands while you are editing. This is room, for example, to store 13 **.RR** dot commands or 500 **.RM** dot commands. If you use more dot commands than fit in this memory, the display may be wrong, but the document will print correctly. You can set aside more memory with WSCHANGE. See Appendix C, "Customizing WordStar."

Merge print dot commands

These dot commands are used only for merge printing. WordStar flags them with a colon (:), indicating that the printout is affected but not the onscreen display. In this list, **filename** means the name of a file is needed, and **V** or **V1** means that the name of a variable is used. See **Merge printing** and **Merge printing conditional commands** for more information on these commands.

Command	Additional Information	Function
.AV	*"text",V*	Uses this text to ask for this variable.
.DF	*filename*	Reads the named data file.
.EI		Ends a conditional merge print statement.
.EL		Specifies a conditional alternative (ELSE) in merge printing.
.GO	top/bottom	Skips to the beginning or end of file.
.IF	*text*	Begins a conditional statement in merge printing.
.MA	*V=text*	Gives a math equation for merge printing.

Command	Additional Information	Function
.PF	on/off/dis	Reformats (aligns) while printing. The **dis** setting means discretionary; aligning is done only where merge print variables are inserted.
.RV	*V1*, *V2*, etc.	Reads the variable(s) in the data file using these variable names.
.SV	V=*text*	Sets the value of a variable.

Other dot commands

This group includes commands that control the way WordStar displays information onscreen while it is printing and commands used for indexing and creating tables of contents. WordStar flags these commands with a colon (:).

Command	Additional Information	Function
.CS	*text*	Clears the screen and displays the text, if any, as a message. See **Messages while printing**.
.DM	*text*	Displays the text as a message. See **Messages while printing**.
.IX	*text*	Creates an index entry. See **Indexing**.
.TC	*text*	Creates a table of contents entry. See **Table of contents**.

Double strike

When you use the double strike command (**^PD**), the printer strikes each character twice to produce a light boldface for emphasizing words or phrases. Place the cursor where you want the double striking to start and press **^PD**. The symbol **^D** appears on your screen but is not counted as a character space in the status line. New text you type is highlighted on the screen. The printer will double strike the highlighted text.

To stop double striking, move the cursor to where you want it to end and press **^PD** again. The highlighting also stops.

To delete double striking, place the cursor on the ^**D**, and press **Del** or ^**G**. Be sure to remove both the beginning and ending markers. See also **Boldface**.

Drawing

You can easily draw lines and boxes using function keys. Each of the ten function keys is preset to produce a line-drawing character when pressed together with the **Alt** key. You can use these characters to draw lines and boxes. These function key settings are shown below:

Alt-F1	│	Alt-F2	─
Alt-F3	┌	Alt-F4	┐
Alt-F5	└	Alt-F6	┘
Alt-F7	┬	Alt-F8	┴
Alt-F9	├	Alt-F10	┤

As with all function key settings, you can change these using WSCHANGE.

A file named BOX is supplied on your WordStar Program Disk. It consists of a box drawn with the function key characters. This box is 23 columns wide and 7 lines deep. You can use it to enclose a title or text up to 21 columns wide and 5 lines long. You can insert this box into a file with the ^**KR** command. Use the following procedure.

1. Type the text you want to place in your box. Move the cursor to column 1 of any line above or below the text.
2. Press ^**KR**, type **box**, and press ↵. Include the drive letter or directory path if the BOX file is not on the logged directory. WordStar inserts the box.
3. Turn on column mode and column replace (^**KN**^**KI**). Mark the text to insert into the box as a block.
4. Move the cursor to column 3 of the first line inside the box. Press ^**KV** to move the block. The text moves inside the box. You can adjust its position as needed.

When you edit inside a box, turn Insert off. With Insert on, characters and spaces you type push the right side of the box to the right on the line you're editing. Also be careful when using the **Backspace** and **Del**

keys. If you accidentally erase a character that's part of the box, you can replace it with the appropriate function key character. You should also use the **.AW off** command before a box in your text to be sure the box is not accidentally realigned.

If you use proportional spacing, you may want to use **.PS off** to turn it off before a box. Otherwise, the right side of the box may be uneven when it's printed.

You can easily change the size of a box when the box is empty. To make a box shorter, delete one or more lines that contain characters on the right and left sides of the box. To make a box taller, mark as a block one or more lines that contain characters on the right and left sides of the box, then copy the block. To make a box narrower, mark as a column block one or more columns that contain characters on the top and bottom lines of the box, then delete the block. To make a box wider, mark as a column block one or more columns that contain characters on the top and bottom lines of the box, then copy the block.

If you use boxes or line drawings frequently, you can use the function keys to draw each one in a separate file. You can also create a new line or box by copying an existing line or box file and editing it to the size and shape you want. You can then use **^KR** to insert the files as you use them.

If you like, you can define a shorthand character to insert a box or line file. For example, you could define the shorthand character D to insert the file BOXD. The definition would be **^KR boxd** ↵. If you use a shorthand character to insert a file, either make sure the file is always on the current logged drive and directory or specify the drive letter or directory path with the filename in the shorthand definition.

> ***TIP*** *Drawing vertical lines takes some time. Before you enter each vertical character you must move the cursor down a line and to the same column the line above is in. You can keep a standard vertical line in its own file or as a shorthand character and insert it when you want a vertical line. You can do the same with a standard horizontal line.*

The actual characters that make up the lines and boxes you print depend on your printer. If your printer cannot draw the actual graphics characters, WordStar instructs it to use the available characters that are most similar to the graphics characters.

Editing

Editing is the process of making changes to the content or appearance of an existing document. Adding, deleting, or moving text, or boldfacing a heading are examples of editing.

To edit an existing document, press **D** at the Opening Menu (or **N** for a nondocument file), then type the filename and press ↵. When the document appears on the screen, use any of the WordStar commands to edit it.

> ***TIP*** *When you do extensive editing in one session, it's a good idea to save your work periodically with* ***^KS****.*

You can start editing a file without going through the Opening Menu. When you start WordStar, name the file at the operating system prompt as shown in the example below.

```
A> ws  first.doc
```

If necessary, include a drive letter or directory path, as shown below.

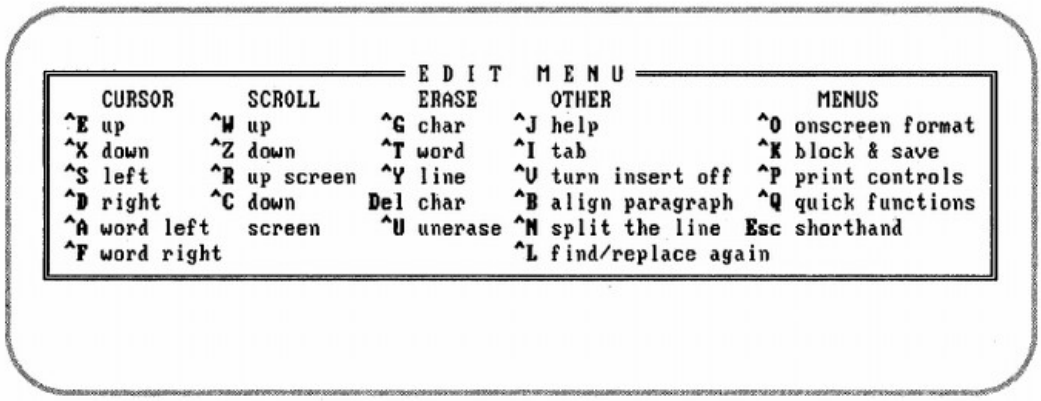
```
A> ws  c:\wp\letters\first.doc
```

If the file already exists, WordStar takes you straight to it. If you're creating the file, WordStar displays the **Cannot find it. Create a new one? (Y/N)** prompt.

Files you open from the operating system prompt are always documents. You can specify that these files be nondocuments with WSCHANGE. See Appendix C, "Customizing WordStar."

Edit Menu

The Edit Menu contains many basic editing commands and commands to activate other menus. Commands are grouped under five headings, **CURSOR**, **SCROLL**, **ERASE**, **OTHER**, and **MENUS**.



While you're editing a file, this menu is always displayed if your help level is set to **3**. If your help level is other than **3**, you can press **^J** to display the Edit Menu, then press the **Spacebar** to remove the menu display. The help level determines whether or not the menu is normally displayed. You can change the help level either for a work session using **^J^J**, or as a default using WSCHANGE. See **Help levels**.

To use an Edit Menu command, hold down the **Ctrl** key while you press the command letter.

CURSOR commands move the cursor around the screen. **SCROLL** commands roll the screen up and down. **ERASE** commands remove text from the screen. **OTHER** commands provide additional basic editing functions. The commands listed under **MENUS** display WordStar's other main menus.

See also **Aligning a paragraph**, **Blank lines**, **Cursor movement and scrolling**, **Deleting text**, **Finding and replacing**, **Help levels**, **Help messages**, **Inserting**, **Scrolling**, **Tab stops**, **Undo and unerase**, and the entries for the specific menus.

Embedded ruler

See **Ruler lines**.

Enter key

The **Enter** or **Return** (↵) key (or the command **^M**) moves the cursor to the next line. When Insert is on, ↵ inserts a hard carriage return (the symbol < in the flag column) at the end of the line. When Insert is off, ↵ provides cursor movement only.

CAUTION *When word wrap is on during normal typing, the cursor automatically moves to the next line when it reaches the right margin. This type of return is called a soft carriage return. During paragraph aligning, WordStar adds soft returns where they're needed and erases those that are not needed. Don't press ↵ at the end of a line unless you want a hard return at that point.*

You also press ↵ to signify the end of your response to a WordStar prompt.

Erasing

See **Deleting text**.

Error messages

When an error occurs, WordStar displays an error message to explain what has happened. The message often suggests what to do next. Most errors are minor; you can correct them and proceed. A few are serious and can mean that you've lost work.

See Appendix A, "Error Messages," for a list of error messages and their meanings.

Exiting

To exit from a document, you can use any of three commands. **^KD** saves your file and returns you to the Opening Menu. **^KQ** returns you to the Opening Menu without saving your latest changes. **^KX** saves your file and exits from WordStar, returning you to the DOS prompt. See also **Saving a file**.

To exit from WordStar, type **X** at the Opening Menu. WordStar returns you to the DOS prompt. If you're printing in the background when you press **X**, the Printing screen appears. You must finish or quit printing before you exit. See **Printing a file**.

Extended character set

The text you see on the screen when you're editing a document is stored using a standard ASCII code for each character. Every printer that works with WordStar accepts ASCII printing characters. These characters appear on the screen almost exactly as they do when printed.

Some printers can also print an alternate set of special characters called an extended character set. However, because there is no standard for these characters, they may vary from printer to printer.

To print a character from the extended character set, check your printer documentation to find the corresponding ASCII character code. Then hold down the **Alt** key and press the number on your numeric keypad. When you release the **Alt** key, a character appears on the screen. Depending on your computer, the character that appears may not be the same one that prints.

See also Appendix F, "ASCII Character Codes and Extended Character Set," and your printer documentation for more information.

Files

Information stored electronically on a disk is called a file. A file can contain a document you've typed, a computer program, or another type of information.

You assign a filename to every document you create. WordStar uses the filename to keep track of your document so you can find and use it later. A filename is made up of eight characters and an optional three-character extension. There is a period between the name and extension.

There can be no spaces between the characters in a filename. WordStar doesn't distinguish between uppercase and lowercase letters in filenames. Filenames can include letters, numbers, and the following symbols:

$ & # @ ! % ` ' ( ) - _ ^ ~

You can use filename extensions to remind you of what's in your files. For example, you can give all your letters the extension of .LTR or give a file the extension .915 if you revised it on September 15. Files with the extensions .COM, .EXE, .OVR, and .$?$ (where **?** can be any character) do not show up in WordStar's directory, so don't use them to name your text files.

File operations

Five commands on the Block & Save Menu let you manipulate other documents without leaving the one you're currently editing. These commands are especially useful if you try to save a file and find out that you have run out of room on the disk. They allow you to make room on the disk so you can save the file. (You can also use **^KF** to recover from a disk space problem. See **Running a DOS command**.)

Command	Function
^KJ	Erases a file. You can use this to make room on the disk for saving a long document. You can erase several files at once using wild cards. For example, if you press **^KJ**, then type *.BAK, WordStar erases all backup files.
^KL	Changes the logged drive or directory so that you can examine the names of the files in a drive or directory other than the current one. This way, you can erase unneeded files with **^KJ**, then use **^KO** to transfer other files from the disk that is too full to save your current work on.
^KO	Copies a file. The original is not erased. This command is handy for freeing space on your disk so WordStar can save the current file. Copy files to another directory or disk, then use **^KJ** to erase the originals.
^KW	Stores a block in a separate file. You can store a block from the file you're working on. The block becomes a new file that you can edit like any other file. The original block is not erased. You can write blocks of text from your file to another disk or directory, then erase the blocks from your file to make the file small enough to save. Later, when you have enough room on a disk, you can reassemble the document by reading in the blocks with **^KR**.
^KE	Renames a file. If another file has the same name you want to use for a file you're saving or copying, you can rename it.

When you enter one of these commands (except for ^**KL**), WordStar asks for a filename and displays the disk file directory. Type the filename and press ↵. Include the drive letter or directory path if necessary.

Finding and replacing

WordStar can find, find and replace, or find and delete any word or phrase (string) in a file.

You can use three find and replace commands:

Command	Function
^**QF**	Finds a string.
^**QA**	Finds a string and replaces it with another string.
^**L**	Finds or finds and replaces the next occurrence of the same string.

When you press ^**QF** or ^**QA**, WordStar asks you for the string to find, the string to replace it with (for ^**QA** only), and the options you want to use. At each prompt, type the appropriate response and press ↵. Strings and options are described below.

When you use ^**QF**, WordStar finds the next occurrence of the string and moves the cursor to it, then returns you to normal editing. You can then use ^**L** to find the next occurrence.

When you use ^**QA** (unless you use the **G** or **R** option described below), WordStar finds the next occurrence of the string, asks you whether you want to replace it, replaces it if you answer yes, then returns you to normal editing. You can then use ^**L** to find and replace the next occurrence. If you use the **G** or **R** option, WordStar finds and replaces all occurrences of the string without pauses for editing.

To stop a find or find and replace operation before it ends, press ^**U**.

Strings

A find or replace string can be any sequence of characters, including spaces and control characters. To specify a control character, use the ^**P** (literal) command to signify "Accept the next character literally." For example, to enter ^**P**^**B** for bold in a string, hold down the **Ctrl** key and press **PB**. You can use ^**P**^**M** ^**P**^**J** to find hard carriage returns (hold down the **Ctrl** key and press **PMPJ**). A string can be up to 65 characters long.

You can use the question mark (**?**) in a string as a wild-card character. For example, to find all occurrences of **Suzy**, **Susy**, and **Suzi**, you can enter **Su??**.

To delete a string, press **^QA**. At the **Replace with?** prompt, press ↵ to replace the string with nothing.

> ***CAUTION*** *When you enter a string to find, you must be precise because WordStar will search for exactly what you type. If you put an extra space after a word, WordStar will find it only if you used an extra space in the text too.*

Options

After you enter a string, WordStar displays a list of options that you can use for the search. You can choose as many options as you want. Just type them one after another and press ↵. The options are explained below.

Option	Result
W	Searches for whole words only. For example, if you don't use this option, WordStar finds "can" in "can't," "canned," "American," and "scandal."
U	Ignores the case of the characters (uppercase or lowercase). Use this option to find a string regardless of whether any letter is capitalized or not.
B	Searches backward. This option causes the search to go backward from the cursor toward the beginning of the file. Use it when you're at the end of a file, or when you know that what you want is somewhere before the cursor.
?	Treats the **?** character in the search string as a wild card, matching it with any character in that position. If you don't use this option and use a **?** in the string, WordStar searches for the **?** character.

Option	Result
n	(Type a number (*n*) here.) Finds the ***n***th occurrence of the string. With **^QF**, this option moves the cursor to the occurrence. For example, to find the fifth occurrence of the word "the" in your document, type the number **5** as an option. With **^QA**, this option tells how many occurrences of the string are to be replaced. For example, to replace the next five occurrences of "the" with "a," type the number **5** as an option. (This option is not displayed on the screen.)
G	Moves to the beginning (or end, if the **B** option is also used) of the file before beginning the search. With **^QA**, searches globally (for all occurrences of the string) through the entire file starting from the beginning (or end).
R	Searches globally through the rest of the document. This option works only with the **^QA** command. It works like **G**, except that it doesn't first move to the beginning (or end) of the file.
N	Doesn't ask about each replacement. In a replace operation, WordStar normally stops at each occurrence of the string and asks if you want to make the replacement. This option tells WordStar to replace the string without asking. The replace operation is displayed onscreen so you can keep track of it. Unless you are also using the **G** or **R** option, after the first replacement, WordStar stops with the cursor at the beginning of the replacement text, and you have to use **^L** to find and replace the next occurrence.
A	Aligns paragraphs after replacement. When you select this option, WordStar automatically aligns each paragraph after it replaces a string. After reaching the end of the paragraph, it returns the cursor to the spot where the replacement was made. If the **G** or **R** option is also selected, WordStar continues finding and replacing, aligning after each replacement. (Note that WordStar does not hyphenate during a find and replace operation, even if hyphen help is on.)

If you don't use the **A** option, you may need to go back and align the paragraphs after replacing strings. Also, when using **A**, you may not want to use the **N** option, so that you can note all the places where realignment takes place. Remember that when realigning, unless the text contains dot commands to set the margins, the margins in the text may change.

TIP *You can use the* ***.AW off*** *dot command to prevent alignment of text (such as tables) you don't want realigned. See* ***Aligning a paragraph****.*

You can set default options with WSCHANGE. If you don't select any options at the **Option(s)?** prompt, WordStar uses the default options you set in WSCHANGE. (If you do select any options, none of the default options are used unless you specifically select them.) If you press the **Spacebar** and ↵ at the **Option(s)?** prompt, WordStar doesn't use the default options. If you use WSCHANGE to select the **N**, **A**, or **R** options as defaults, WordStar ignores them when it is finding without replacing.

TIP *When you use the* ***G*** *(or* ***R****) option and the* ***N*** *option together, you can turn off the display of replacements to speed up the operation. Just press the* ***Spacebar*** *after you see the operation start on the screen.*

Finding your place

Several commands move the cursor to a particular place in the text. These commands are described below.

Command	Function
^Q 0–9	Goes to a marker that you previously set with **^K 0–9**. See **Place markers**.
^QB	Goes to the beginning of the marked text block.
^QG	Goes to the next occurrence of a character. When you use this command, WordStar asks for the character. When you enter the character and press ↵, WordStar searches and stops at the character.
^QH	Goes to the previous occurrence of a character. This command works just like **^QG** except that WordStar searches backward.

Command	Function
^QI	Goes to a particular page (or line, in non-documents). When you press this command, WordStar asks for the page number. After you type the page number and press ←┘, WordStar searches and stops on the page. If it's searching forward, it goes to line one. If it's searching backward, it goes to the last line of the page.
^QK	Goes to the end of the marked text block.
^QP	Goes to where the cursor was located before the last command. You can use this only immediately after the command is executed.
^QV	Goes to where the most recent find string was located or to where the last marked text block was located.

Flag column

On the right side of the screen, WordStar displays a "flag" for each line to remind you what you typed on the line. Flags are displayed automatically. The flags and their meanings are listed below.

Flag	Meaning
<	This line ends with a hard carriage return.
	A blank space in the flag column means the line ends with a soft carriage return produced by word wrap within a paragraph.
P	This is a page break; a new page begins below this line.
F	This line ends with a form feed produced by the ^PL command.
^	The file ends on or above this line.
+	Text on this line extends beyond the right edge of the screen.
.	The dot command on this line changes the onscreen format and the printout.
:	The dot command on this line changes only the printout.

WordStar prints a maximum of 100 characters in a footer or header. This length can be changed with WSCHANGE. If you are using wide paper, you may want to set it higher (try 150).

See also Appendix B, "WordStar Examples and Tips," and Appendix C, "Customizing WordStar."

Formatting

The format of a document is its shape or appearance. You can change document format with onscreen format commands, which are shown on the Onscreen Format Menu, and with dot commands.

See the following entries for information on the corresponding format elements: **Aligning a paragraph, Centering text, Hyphenation, Indenting, Justification, Line height, Line spacing, Margins, Page breaks, Page length, Print Controls Menu, Ruler lines, Tab stops,** and **Word wrap.**

Form feeds

To begin a new page without going to a new line, move the cursor to where you want to end the page and line, then press **^PL**. The symbol **^L** appears, followed by a dotted line across the rest of the line. The symbol **F** appears in the flag column.

When the printer encounters the form-feed symbol, it advances the paper the number of lines necessary to leave blank lines on the rest of the page being printed. The footer or page number is not printed.

> ***CAUTION*** *Your printer must be capable of accepting form-feed characters in order to use this feature.*

The dot command **.XL** is used to define the form-feed string. Use it only if your printer requires a different form-feed string than the printer driver uses.

Form letters

Sometimes you send individually addressed and modified copies of the same letter to many people. This type of document is called a form letter. You can also create other form documents, such as wills, contracts, or invoices.

To make a form letter, create a prototype of the letter, called the master document. Put variable names surrounded by ampersands (&) in the places in the master document that will change from one printout to the next. Add the appropriate merge print dot commands.

Also create a data file containing the individual names, addresses, and other information. Then merge print the form letters with the **M** command at the Opening Menu.

You can use the same data file in a second printing to print envelopes for the letters; merge print an envelope file just as you would the form letter file.

See also **Data files**, **Merge printing**, and Appendix B, "WordStar Examples and Tips."

Function keys

The function keys, which are usually labeled **F1**, **F2**, **F3**, and so on, enable you to execute the most often used WordStar commands with a single keystroke.

In WordStar, each function key is preset to work as one command when pressed alone and as another command when pressed together with the **Shift** key, a third command when pressed with the **Ctrl** key, and a fourth command when pressed with the **Alt** key. For example, pressing **F9** is the same as pressing **^KS** to save the file and continue editing. Pressing the **Shift** key and **F9** is the same as pressing **^KB** to begin a block. Pressing the **Ctrl** key and **F9** is the same as pressing **^QS** to move the cursor to the left side of the line. Pressing **Alt** and **F9** inserts a box-drawing character. (See **Drawing**.)

Two function key settings for each key are shown on the bottom of the screen while you are editing. The lower one is for the key when pressed alone, and the upper one is for the key when pressed with the **Shift** key.

All the function key settings are shown on the WordStar keyboard overlay. You can use WSCHANGE to change the settings or to suppress or change the onscreen display of the settings.

See also Appendix C, "Customizing WordStar."

Headers

See **Footers and headers**.

Help levels

WordStar's menus and prompts are extremely helpful when you're learning the program. However, once you're an experienced WordStar user, you may want to turn off the display of menus and prompts. You can turn them off by changing the help level.

Menus take up one-third of most screens, so turning them off by changing from level **3** to **2** allows you to see considerably more of a document while you edit.

You can set help levels at the Opening Menu by pressing **J**, or while editing a document by pressing **^J^J**. The help levels are described below.

Help Level	Description
3	All menus and prompts are displayed. This is the default setting.
2	The Edit Menu is not displayed, but prompts are displayed. This gives a full-screen display of the document. Other menus will be displayed if you pause after pressing the menu letter (**^K**, **^O**, **^P**, **^Q**).
1	No menus are displayed during editing unless you ask for help. Certain prompts are not used either.
0	No menus are displayed during editing unless you ask for help. There's no status line.

No matter what help level you're using, you can display the Edit Menu by pressing **^J**.

You can change the default help level with WSCHANGE. See Appendix C, "Customizing WordStar."

Help messages

You can get onscreen help for every command that's listed on a menu. Press **J** at the Opening Menu to begin the Opening Menu help messages. The first message explains how to call up the rest: Type the letter of the command you want help with.

To get help while editing a document, press **^J**. WordStar displays the Edit Menu and the first help message. The message explains how to call up help messages for every menu and command: Hold down the **Ctrl** key and press the letter of the command you want help with.

You can also press **^J?** for help with screen layout and **^J.** for help with dot commands.

After you read a help message, press **Esc** to go back to the Opening Menu or to editing. If the help message takes up more than one screen, you must press **Esc** to display the next screen or **^U** to cancel the help.

Hyphenation

WordStar can help you hyphenate words at the ends of lines when you align paragraphs. Use **^OH** to turn hyphen help on and off. When hyphen help is on, WordStar places the cursor in the right margin column on certain lines and asks you whether to hyphenate the word there or to continue with aligning.

Before you hyphenate a word, you can move the cursor left or right to the spot where you want the hyphen to go. (You cannot move the cursor out of the word or to the right of the margin.) To insert a hyphen at the cursor, type a hyphen (-).

If you don't want a hyphen, press **^B**. WordStar moves the entire word to the next line and continues aligning the paragraph. You can also press **^U**, which will turn hyphen help off for the rest of the paragraph.

You can also use hyphen help with **^QU** to hyphenate and realign several paragraphs or a whole document.

WordStar decides when to stop and ask for a hyphen by counting the number of characters to the left of the right margin in any word that straddles that margin. If that number exceeds a preset minimum, WordStar stops. If not, it automatically moves the word to the next line. The default minimum value is five characters and can be changed with WSCHANGE.

The hyphen WordStar uses during hyphen help is called a "soft hyphen" because it is printed only when it's at the end of a line. If subsequent alignings move a soft hyphen away from the end of the line, the hyphen is displayed onscreen as an equal sign (=), but it is not printed. You can change the = to another character with WSCHANGE.

The hyphens you type yourself during editing are hard hyphens. They stay in the text until you erase them. To type a soft hyphen, press **^OE**.

Soft hyphens disappear when you turn off the display of print control characters with **^OD** or **^OP**.

See also Appendix C, "Customizing WordStar."

Incremental printers

An incremental printer can move the paper and the printhead in very small increments. This allows WordStar to use microspacing to justify, to vary line heights, and to offset subscripts and superscripts by a partial line height.

The paper can usually be moved in vertical increments of 1/48 of an inch. The printhead can usually be moved in horizontal increments of 1/120 of an inch.

Both daisy wheel and dot matrix printers can have incremental printing capabilities.

The two dot commands **.LH** (line height) and **.SR** (subscript and superscript roll) affect vertical increments. The dot command **.CW** (character width) affects horizontal increments. See **Character width**, **Line height**, and **Subscript and superscript**.

Indenting

WordStar has several ways to indent a line. Your choice depends mostly on the particular situation. Five ways to indent are described below.

- Press the **Spacebar**. The cursor moves right one space each time it's pressed. This method is efficient for indents of one or two spaces. It works only when Insert is on. See **Inserting**.

- Press the **Tab** key. Tabbing allows you to indent an individual line without changing the left margin.
- Use the temporary indent command **^OG** to indent one paragraph. It automatically indents your text to the next tab stop (excluding decimal tabs). The indenting stops when you press either ↵ at the end of the paragraph or **^B** to align the paragraph. (When Insert is off, the indenting stops only when you press **^B**.) If you enter **^OG** once, it indents to the first tab stop. If you enter it three times, it indents the lines to the third tab. You can see how far the indent goes by the **V** in the ruler line.

  You can combine a temporary indent with aligning to align a paragraph to a new left margin. Just press **^OG**, then **^B**.
- Change the left margin. Type **.LM** followed by the new column number. This command stays in your text, allowing you to keep the indented left margin when you align paragraphs in subsequent editing sessions. You can also use the **^OL** command to change the margin. However, with **^OL** the margin will change back to the original margin when you align paragraphs in later sessions. Changing the left margin with **.LM** is the best way to indent a large number of lines. When you change the left margin, you need to restore your original left margin when you are done typing the indented part of your text.
- Use the paragraph margin dot command. Type **.PM** followed by the column number where you want the first line of each paragraph to begin. The following lines in the paragraph start at the left margin. For example, if you type **.PM 5** and your left margin is at column 1, the first line of each paragraph is indented to column 5.

  The **.PM** command is useful for entering numbered lists where you want the numbers out to the left of the text. If you type **.PM 1** and set the left margin at column 4, the first line of each paragraph starts at column 1 and the remaining lines start at column 4. See also **Paragraph margins**.

Indexing

An index is an alphabetical listing of topics, words, and phrases accompanied by the page numbers where each topic, word, or phrase can be found. WordStar can automatically create an index for a document.

You can mark index entries in your text by pressing **^PK** at the beginning and end of each word or phrase you want to include in the index.

You can also enter a word or phrase to be indexed using the dot command **.IX** followed by the word or phrase. Type the dot command in the first column of the line just before the paragraph that contains the word, text, or topic. (Don't type it in the middle of a paragraph or it might be drawn into the text if the paragraph is aligned.)

The dot command format is shown below.

.IX phrase to index, subreference

The subreference is optional. When you print the index, a subreference appears under the main reference, indented two spaces, as shown below.

Phrase to index
Subreference, 1

With either **^PK** or **.IX**, the maximum length of a phrase to be indexed is 50 characters including the subreference. Extra characters are ignored.

For a cross-reference, type a hyphen (-) before the word or phrase, as shown below.

.IX – Naming files, see Files

The only difference between this kind of entry and one without the hyphen is that no page number is included.

You can tell WordStar to index only the words and phrases marked with **^PK** and **.IX** or to index all the marked words and phrases and all the words in the document minus any words that appear in exclusion lists.

An exclusion list is a nondocument file that contains an alphabetical list of words to exclude from an index. WordStar uses two exclusion lists. The general exclusion list is named WSINDEX.XCL and is supplied with WordStar. It contains a list of the most common words in English (articles, pronouns, prepositions, conjunctions, etc.) that almost never appear in indexes.

The document-specific exclusion list has the same name as the document for which you are making the index, but with the .XCL extension. This list contains specific words from your document that you want to exclude.

To make an index, type **I** at the Opening Menu. WordStar asks you to name the document file to index. Type the document name and press ↵. WordStar asks you if you want to index every word. Answer **Y** to index

every word, minus the words that appear in the exclusion lists. Answer **N** to index only the words and phrases marked with **^PK** or **.IX**. WordStar asks you for the starting and ending pages. Type each page number and press ←┘.

If you press **Esc** after naming the document, WordStar skips the rest of the prompts and uses default values. **N** is the default for the **Index every word** prompt (you can change this with WSCHANGE), and the first and last pages of the document are the defaults for the starting and ending page number prompts.

WordStar creates an index file that has the same filename as the document with the .IDX extension. You can use WordStar to edit the index file by changing the format, adding bold print or underlining, and so forth.

The procedure below shows a method of constructing an index using the index every word option as a shortcut to making an exclusion list.

1. Mark phrases that you want to index. (Don't bother marking single words.) Use **^PK** to mark phrases in the text and use **.IX** to enter other phrases. Go through the entire document in this way.
2. At the Opening Menu, press **I** to index the document. At the **Index every word** prompt, answer **Y**.
3. At the Opening Menu, press **N** to edit a nondocument file, and enter the name of the index file (the name of your document file with the .IDX extension). Read through the index file. The phrases you marked appear in the index as you marked them. All the other words in the document (except those in the general exclusion list) also appear in the index. Most likely, you'll want to eliminate many of these words but keep some of them. Each time you see a word that you want in the index, erase the line that contains the word. When you have gone through the entire index file, press **^KD** to save it. Then rename the index file by changing the .IDX extension to .XCL. This file is now your exclusion file.
4. Have WordStar index every word in the original document again. This time through, WordStar will exclude the words in the new exclusion file, leaving you with an index that includes all the phrases and words you marked and all the words that you want.

See also **Table of contents.**

Inserting

You can press either ^V or the **Ins** (Insert) key to turn Insert on and off. When Insert is on, you insert new characters between previously entered characters as you type. When Insert is off, you type over previously entered characters, deleting them as you type new characters. When Insert is on, the word **Insert** appears in the status line.

The default for Insert is on. You can change it using WSCHANGE. See Appendix C, "Customizing WordStar."

When Insert is on, use the commands in the chart below for inserting text.

To insert a	Follow these instructions
character or word	Type the characters.
space	Press the **Spacebar**.
line above cursor	With cursor in column 1, press ↵.
line below cursor	With cursor at end of line, press ^N. See **Blank lines**.
sentence, paragraph, or page (text block)	Mark beginning (^KB) and end (^KK), move cursor to new place, and press ^KV or ^KC. See **Blocks**.
file	Press ^KR.
dot command or print command	Type the command. (A dot command must begin in column 1 and end with ↵.)

When you're working in column mode, column replace affects block insertion. See **Column blocks**.

Installing WordStar

See "Starting" for instructions for installing WordStar. Normally, you go through the WINSTALL installation program only once, before you use WordStar for the first time. However, if you change computers, printers, or other features of your computer system, you may have to repeat the installation procedure.

WordStar also has a customization procedure, WSCHANGE, which allows you to set up advanced features and to change defaults. See Appendix C, "Customizing WordStar."

Italics

If you have a printer that supports italics, you can select the italics font with **^PY**. Place the cursor where you want the italics to start and press **^PY**. The symbol **^Y** appears on your screen. To stop the italics, move the cursor to where you want the italics to end and press **^PY** again.

To delete the symbol for italics, place the cursor on the **^Y** and press **Del** or **^G**. Be sure to remove both the beginning and end markers.

On some printers that have two-color ribbons, **^PY** selects the second color. See also **Color**.

Justification

Justification causes the right margin of a document to be even. When justification is on, WordStar adjusts the length of each line, adding soft spaces between words so that the last character on each line is in the right margin column. When justification is off, WordStar doesn't add spaces, and the right margin is ragged (that is, uneven).

The default setting for justification is on. You can change it with WSCHANGE.

You can use the **^OJ** command to turn justification on and off while you're working. When you use **^OJ**, the setting remains in effect until you exit the file you are editing. You can also use the **.OJ on/off** dot command to permanently set justification on or off within a document.

To justify text that is ragged, turn justification on and align the paragraphs with **^B** or **^QU**. To change justified text to ragged right, turn justification off and align the paragraphs.

See also **Microjustification**, **Soft spaces and carriage returns**, and Appendix C, "Customizing WordStar."

Keyboard

Keyboards differ slightly from one computer to another. The positions and names of some of your keys may be different from those described in this manual, but they have the same functions.

WordStar uses several special computer keys for many functions.

The numeric keypad on the right side of most keyboards can be used either to move the cursor around or to enter numbers. Press the **Num Lock** key to switch between the two modes. See **Cursor keys** for a description of the keys used to move the cursor.

The keys labeled **F1**, **F2**, and so on are the function keys. For an explanation, see **Function keys**.

The other special keys are described below.

Key	Description
←	Backspace key. Moves the cursor one space to the left and erases the character there.
Caps Lock	Caps Lock key. Shifts letter keys to uppercase (doesn't shift number, punctuation, or symbol keys). Press it once to turn it on and again to turn it off.
Ctrl	Control key. Signals the computer that the next character to be typed is a command. This key is shown in documentation as a caret (^). It must be held down while the next character is typed.
Del	Delete key. Erases the character at the cursor.
Esc	Escape key. Used when WordStar prompts, "Press the ESC key to continue" or to start a shorthand operation. It sometimes is used to bypass options and screen displays.
↵	Enter key. Inserts a hard carriage return in the text. It's sometimes called the Return key.

Key	Description
⇧	Shift key. Allows you to type uppercase letters and the upper set of characters on other keys.
↹	Tab key. Moves the cursor to the next tab stop to the right.
Ins	Insert key. Turns Insert on and off.
Alt	Alternate key. Used with the function keys for special functions that you can set up with WSCHANGE. Also accesses the extended character set.

Layout

The layout of a document is its format, shape, or appearance. You can change document layout with onscreen format commands, which are shown on the Onscreen Format Menu, and with dot commands.

See the following entries for information on the corresponding layout elements: **Aligning a paragraph**, **Centering text**, **Hyphenation**, **Indenting**, **Justification**, **Line height**, **Line spacing**, **Margins**, **Page breaks**, **Page length**, **Print Controls Menu**, **Ruler lines**, **Tab stops**, and **Word wrap**.

Line feeds

To insert a line feed, press **^PJ**. The cursor moves to column 1 on the next line, and the letter J appears in the flag column. When the printer encounters the line-feed symbol, it moves down a line and resumes printing in the column following the one that contains the line feed.

Line height

The distance between lines of print is called the line height. It is measured from the bottom of one line to the bottom of the following line.

Line height is measured in 48ths of an inch. WordStar's default line height is 8/48 of an inch, which means there are 6 lines per inch.

To change the line height, use the **.LH** dot command followed by the number of 48ths of an inch for the new line height. For example, to change the line height to 16/48 (three lines per inch), type **.LH 16**.

TIP *You can use **.LH 16** to print a document double-spaced.*

Line height can vary between 2 and 255, although these extremes are not very useful. The chart below shows the relationship between several different settings for the **.LH** command and the number of lines per inch in the printout.

Command	Lines/inch
.LH 5	9.6
.LH 6	8
.LH 7	6.8
.LH 8	6
.LH 9	5.3
.LH 10	4.8
.LH 12	4
.LH 16	3
.LH 24	2

If a printer can't move in increments of 48ths of an inch, WordStar's printer driver uses the closest line height it can.

Changing the line height affects the number of lines that can be printed on a page. The onscreen display changes to show where the new page breaks fall.

See also **Line spacing** and **Page length**.

Line spacing

Line spacing allows you to print your text double-spaced, triple-spaced, and so on. You can use either the **^OS** command or the **.LS** dot command to change line spacing.

When you press **^OS**, WordStar asks you to select spacing from 1 to 9. **1** stands for single spacing (no blank lines between the lines of text), **2** stands for double spacing (one blank line between text lines), **3** stands for triple spacing (two blank lines between text lines), and so on.

To use the **.LS** command, type **.LS** followed by the spacing number, 1 through 9. Using **.LS** allows you to store the line spacing with your document.

After you change the line spacing, you can use **^B** or **^QU** to realign the document to reflect the new spacing.

See also **Line height**.

Lines

See **Drawing**.

Logged drive and directory

The logged drive or directory is the one you're currently working in. WordStar looks for and stores files on the logged drive unless you tell it otherwise.

WordStar displays the logged drive and directory in the directory heading and displays the logged drive in the status line.

To change the logged drive or directory, press **L** at the Opening Menu or **^KL** while editing. WordStar shows your current drive and directory, lists the legal drives you specified during installation, and asks you for the new logged drive. Type the name of the new drive. To change the logged directory, type the path (for example, \DOC). Include the drive letter if you also want to change the drive (for example, C:\DOC). If you select a drive or directory that doesn't exist, an error message appears.

When you choose a file (for example, to open or erase it), WordStar assumes the file is on the logged drive and directory. If the file is on a different drive or directory, you have to include the drive or path with the filename (for example, A:MEMO.DOC, C:\LTR\RSY.PLN, or \DOC\SPRI.MEM). Include the drive or directory to copy a file to another drive, too.

> ***CAUTION*** *When you change floppy disks, log onto the new one with* ***L*** *or* ***^KL*** *even if it's on the same drive. If you don't, your operating system may refuse to write to the disk, or it may even destroy data on your new disk.*

See also **Directories**, **Paths**, and Appendix E, "Making the Best Use of Directories and Memory."

Margins

WordStar has seven margins. The margins and their default values are shown below.

Margin	Default Value
Left margin	1
Right margin	65
Page offset	8
Top margin	3
Bottom margin	8
Header margin	2
Footer margin	2

An eighth margin, the paragraph margin, allows you to set a different margin for the first line in each paragraph.

You can change the margins in a document using the commands described below or you can change the defaults using WSCHANGE.

See also **Paragraph margins** and Appendix C, "Customizing WordStar."

Left and right margins

The left and right margins are text boundaries. They're shown in the ruler line (**L** and **R**).

To change the left margin, you can use **^OL** or **.LM**. To change the right margin, you can use **^OR** or **.RM**.

When you use **.LM** or **.RM**, enter the column number for the new right margin with the dot command; for example, **.LM 4**. In most cases, using the dot commands is preferable because the margin change is stored with your text. When you later revise the document, the margins remain where you set them.

When you press ^**OL** or ^**OR**, WordStar displays the current margin and asks for the new one. To set the margin in a specific column, type the column number and press ←┘. To set the margin at the cursor position, press **Esc**.

Alternately, you can use an embedded ruler line (**.RR**) to change the left and right margins. See **Ruler lines**.

You can type outside the left and right margins temporarily by using the margin release command, ^**OX**. This command turns the release on and off. When margin release is on, **Mar-Rel** appears in the status line. Margin release works only as long as the cursor is on the line and outside the margin. If you move the cursor back within the margin or to another line, margin release is turned off.

Page offset

The left and right margins are usually not the page columns where the text is actually printed. In printouts, a page offset is added. The page offset causes every line to start a few columns to the right of the left edge of the paper.

To determine where the left margin will print, add the left margin to the page offset. For example, a left margin of 1, plus an offset of 12, means the left margin will print starting in the 13th column of the paper. A margin of 11 plus an offset of 12 means it will start printing in column 23.

The default page offset is 8 spaces. To change the default, use the **.PO** dot command, followed by the new page offset; for example, **.PO 6**.

Top and bottom margins

Even though they aren't actually shown on the screen, the top and bottom margins also affect the screen display by changing where page breaks go.

To find how many lines of text can be printed on a page, subtract the top and bottom margins from the page length. Larger top and bottom margins result in fewer lines of text on a page and more frequent page breaks. For example, the normal 8½-by-11-inch page has a page length of 66 lines. If the top margin is 3 and the bottom margin is 8, the number of lines is 66 minus 11, or 55. (This is for the default line height of 8. Larger or smaller line heights decrease or increase the number of lines of text.)

To change the top and bottom margins, use the **.MT** and **.MB** dot commands, followed by the number of lines for the margin; for example, **.MT 4**.

Header and footer margins

Headers and footers also use margins. But since headers and footers aren't displayed onscreen, neither are their margins.

The header margin is the number of blank lines between the last header line and the first line of text. The number of header lines plus the header margin size must be the same as or less than the top margin. If it is larger, your text may "creep" as it's printed because there will be extra text lines on a page.

The footer margin is the number of blank lines between the last line of text (on a full page) and the first footer line. Again, to prevent "creeping," the number of footer lines plus the footer margin must be the same as or less than the bottom margin.

To change the header and footer margins, use the **.HM** and **.FM** dot commands, followed by the number of lines in the margin; for example, **.FM 4.**

If you use a footer margin of 0, be sure to turn page numbering off (**.OP**).

See also **Headers and footers.**

Markers

See **Place markers.**

Math

See **Block math**, **Calculator**, and **Merge printing**.

Maximum document size

Both the WordStar program and the operating system take up space in the computer's memory. WordStar uses the space that's left as working memory. Files are stored in memory while you're working on them.

If the current file gets so big that it can't fit in memory, pieces of it are shuffled back and forth to temporary files on the disk. (These files have the same name as the file being edited with the extensions .A and .B.)

When you're editing a document and less than 3K bytes of RAM are left, WordStar displays the message **Large-File** in the status line. This is a reminder that the document is almost too big to fit in memory, and that some of it will have to be stored on disk.

Disk space is more critical than working memory space. In general, a file is too long when it's larger than one-third of the total space on the disk. Because WordStar needs room for the temporary files it creates, the available disk space must be at least twice the size of the document. For example, if you are editing a 120K file, you must have an additional 240K free. If less space is available, WordStar may be unable to store all your work. You may have to erase other files in order to save it.

See also **File operations**, **Memory usage**, and **Temporary files**.

Memory usage

WordStar is loaded into the computer's random access memory (RAM). If there is enough memory, the spelling dictionaries are also loaded into RAM the first time you use the spelling checker.

Any remaining memory is used by WordStar for holding the text being edited. The more memory that is available, the less WordStar needs to use the disk to handle the portion of the document that won't fit, and the faster the program runs.

If your computer does not have enough available memory to load WordStar, the message "Insufficient memory" appears and you are returned to the operating system.

> ***TIP*** *To find out how much RAM is used by WordStar and your text and data files, press ? at the Opening Menu.*

See also **Temporary files** and Appendix E, "Making the Best Use of Directories and Memory."

Menus

A menu is a list of commands from which you select the task you want WordStar to do. WordStar has seven major menus.

The Opening Menu is displayed when you start WordStar. It lists commands for basic file operations such as editing, printing, and deleting.

The other menus are displayed when you are editing a file. When you open a document, the Edit Menu is displayed. It contains basic editing commands, including the commands to display the rest of the menus.

The Block & Save Menu contains commands for operations on blocks of text and files. The Onscreen Format Menu contains formatting commands. The Print Controls Menu contains commands for printing

enhancements. The Quick Menu contains commands for quick versions of editing commands, finding and replacing, math, and spelling checking. The Shorthand Menu allows you to use shorthand versions of common command sequences or phrases.

The current help level determines whether the menu display is on or off.

If you're working in a protected file, the menus are slightly different; they don't show any commands that can modify the file. Menus are also slightly different in nondocument mode.

See also **Help levels**, **Protecting a file**, and the entries for specific menus.

Merge printing

Merge printing is the process of inserting information into a document while it's being printed. The most common use of merge printing is to merge mailing list information into a form letter or mailing labels. Other applications include invoices, contracts, reports, and any other standard document that requires you to "fill in the blanks."

To merge print you need to create a form document called the master document. Usually, you also need a data file.

A master document contains the text of the document and the instructions for how the documents are to be produced. These instructions include variables and special merge print dot commands. An example is a form letter that you intend to personalize with names and addresses from a mailing list.

A variable is information that changes from one copy of the document to another. When you merge print, WordStar inserts specific information for variables into each copy. This information can come from a data file, or you can enter it when you print.

A data file is a nondocument file that contains information to be used in a form document. For example, a mailing list is a data file.

Variables, merge print dot commands, and other merge printing information are described below. For instructions for creating data files, see **Data files**.

Variables

Master documents contain variables wherever information is to be inserted. You assign a name to each variable. The actual information inserted in place of the variable name is called data.

A variable name can contain up to 39 characters. You can use uppercase and lowercase letters interchangeably. For example, **&address&** is exactly the same as **&ADDRess&** to WordStar. You can't use a comma in a variable name, but you can use other punctuation marks. You can put extra blanks on either side of a variable name between the ampersands. WordStar ignores these spaces; for example, **& name &** is the same as **&name&**.

A variable name should be only one word. To use a variable name with two or more words, use a hyphen (-) or underline character (_) where the space would otherwise be; for example, **&first-name&**.

In the spot in the text where you want to insert variable data, type the variable name with ampersands (&) before and after it. For example, to insert the contents of the **name** field from your mailing list, type **&name&**.

Sometimes when you merge print, a variable is empty, meaning there isn't any information in its corresponding data file field. WordStar doesn't print anything in the document for empty variables. However, if the variable is the only text on a line, as in an address, the line probably also contains a carriage return. In this case, if the variable is empty, the printout will include a blank line. To avoid leaving a blank line, use the **/o** (omit) option at the end of the variable name.

For example, it's common for some addresses on mailing lists to have more lines than others. The **/o** (uppercase or lowercase o) option allows you to use an extra line of address where needed without having a blank line for shorter addresses. The example below shows how an address would be specified with variable names without the **/o** option, and how it would print for one mailing list record.

&name&	**Richard Kelley**
&address1&	**72 Live Oak Dr.**
&address2&	
&city&, &state& &zip&	**Novato, CA 95390**

The next example shows how the same record prints using the **/o** option.

&name&	**Richard Kelley**
&address1&	**72 Live Oak Dr.**
&address2/o&	**Novato, CA 95390**
&city&,	
&state& &zip&	

For /o to work, the variable name must be alone on the line in the master document.

You can also include formatting information with the variable by inserting a / (slash) and the number of a format you have predefined. See **Merge printing variable formatting** and **Merge printing variable number formatting**.

To tell WordStar where to get the data to replace the variable names, you use dot commands, which are described below.

You can also use four special predefined variables. Data for these variables is supplied by WordStar when you print; you need to enter only the variable name.

Variable	Function
&#&	Inserts the current page number.
&_&	Inserts the current line number.
&@&	Inserts today's date. The format for the date is the same as for the shorthand date and can be changed with WSCHANGE.
&!&	Inserts the current time. The format for the time is the same as for the shorthand time and can be changed with WSCHANGE.

See also **Shorthand** and Appendix C, "Customizing WordStar."

Merge print dot commands

You type dot commands in the master document to tell WordStar the variable names and where to get the data that goes with them. If you don't use dot commands to define a variable, or if the data is not available, WordStar will print the variable name instead of the data.

You cannot use a piece of data that is longer than 255 characters. And, the total number of characters in all the data inserted in any one copy of the document during merge printing cannot be more than 4,000.

Be sure to end each master document with a page break (**.PA** ↵) so that each copy of the document will start printing on a new page. To check this, use **^QC** to move to the end. The cursor should be in column 1 of the line following the page break.

If you plan to get data from a data file to merge into your form document, you must use the **.DF** and **.RV** commands in the master document. If you want to insert variable data into a document before or during printing without using a data file, use the **.AV** or the **.SV** dot command in the master document.

.DF (Define file) This command tells WordStar what data file to use; for example, **.DF mailing.lst**. Include a drive letter or directory path if necessary; for example, **.DF b:mailing.lst** or **.DF \lists\mailing.lst**.

You can use the **change** (or **c**) option to indicate that you need to change disks while printing to access the data file. For example, you can type **.df b:mailing.lst change** to say that the data file named MAILING.LST will be on drive B, but it's not there now. When you merge print, WordStar asks you to change the disk before it reads the data file.

You can also use **.DF** to tell WordStar that the data file uses a character other than the comma as the data item separator. This is useful if your data contains many commas. For example, if the data file STAR.DTA uses the asterisk (*) as the data separator, you would type

```
.DF star.dta, *
```

.RV (Read variable) This command tells WordStar the variable names for the fields in your data file. **.DF** and **.RV** are always used together in a master document, and **.DF** must come first. The example below tells WordStar to read the data from the MAILING.LST file and use it to replace the variable names **name**, **address1**, **address2**, **city**, **state**, and **zip**.

```
.DF mailing.lst
.RV name,address1,address2,city,state,zip
```

When you merge print, WordStar keeps putting data in copies of the form document until all the data is read from the data file. In the example above, WordStar keeps printing form letters until it has retrieved data from all the records in the mailing list.

It's very important that the **.RV** command names all the fields in the data file, and names them in the same order in which they appear in each data file record. Even if data from a field is not used in a form document, you must name the field in the **.RV** command. You must also be sure that all records in the data file have the same number of fields.

If the **.RV** command and the data file records don't correspond exactly, WordStar will read the wrong data. This happens because WordStar counts the number of variable names in the **.RV** command and then reads that many fields. Because fields can be separated either by commas or carriage returns, WordStar will read fields from the next line (or record) if there aren't enough in the current line (or record).

You can use more than one **.RV** to refer to the same data file. For example, the commands below have the same effect as the one in the example above.

.DF mailing.lst
.RV name,address1,address2
.RV city,state,zip

.AV (Ask for variable) This command tells WordStar to pause during printing and ask you for the data to use to replace a variable. For example, if you want to insert a name in each document, type

.AV name

When you merge print, WordStar pauses in each document and asks

NAME?

You then type the name and press ↵. Wherever **&name&** appears in the document, WordStar replaces it with the data you typed.

With the **.AV** command, you can also include a prompt for WordStar to display when it asks for the data. Type the prompt after the **.AV** and before the variable name. Enclose it in quotation marks or apostrophes and follow it with a comma. To add a prompt to the example above, you could type

.AV "Type the name for this letter: ", name

If you use quotation marks within the prompt, enclose the prompt in apostrophes. If you use apostrophes within the prompt, enclose the prompt in quotation marks.

A prompt or question and its answer cannot be more than one line long because the cursor will stop when it reaches the right edge of the screen. This limits the size of answers, so if you want to leave room for longer answers, keep your prompts short. If your screen is wider than most, the prompt and answer can be longer, but the answer can never be longer than 80 characters.

> ***TIP*** *For a long prompt, use one or more* ***.DM*** *commands to display the prompt message, then use* ***.AV*** *with no message or a short message. See* ***Messages while printing****.*

If you merge print while editing, when WordStar encounters the **.AV** command, it displays the **Print wait** message in the status line. At that point, you must press **^KP** to display the message and enter the data.

.SV (Set variable) This command allows you to include in a master document the data you want to replace a variable with. It is useful in documents where a frequently used word changes from copy to copy of the document. Type **.SV** followed by the variable name, a comma or equal sign, and the data.

For example, you might have a contract between two people, referred to in the master contract as party1 and party2. Each time you print the contract, you want to use new names. At the beginning of the document, enter two **.SV** commands. Each time you need a new contract, edit the master document to enter the appropriate names in the **.SV** command. For one contract, the commands might read

```
.SV party1, Roberta Kachinsky
.SV party2, Anna Marie Casini
```

WordStar ignores any spaces after the comma or equal sign. If you want to include leading or trailing spaces in data in the **.SV** command, enclose the variable in quotation marks or apostrophes. In the example below, there are four blank spaces before the name, so four spaces will be inserted at the beginning of the data.

```
.SV company="    MedCom,Inc."
```

.MA (Math) This command enables you to perform calculations while you are merge printing. It lets you define a variable in terms of an equation that uses information from other variables. For example, you could total the dollar amounts of a customer's monthly purchases and insert the total for the customer in each copy of a form letter.

The **.MA** command is used in the following format:

.MA *variable=equation*

The equation is written like equations used with the onscreen calculator, except that you can use merge print variables. So, the merge print variable that contains the total amount of a customer's purchases could be calculated during merge printing by using the dot command shown below.

.MA total=&item1& + &item2& + &item3& + &item4&

You can use the comma instead of the equal sign, as shown below.

.MA total,&item1& + &item2& + &item3& + &item4&

Notice that the merge print variables to the right of the comma (or equal sign) are surrounded by ampersands (&), while the variable to the left of the comma (or equal sign) is not. This is because the ampersands mean "substitute the data here."

When you print, WordStar reads data for the variables **item1**, **item2**, **item3**, and **item4** from a data file, adds them, and inserts the total in the text as the data for the **total** variable. You also need to use the **.DF** and **.RV** dot commands. (Alternately, you could supply data without a data file using the **.AV** or **.SV** dot command.)

See **Calculator** and Appendix B, "WordStar Examples and Tips."

.PF (Print time reformatting) Your master document includes variable names that are replaced by actual data when you print. The data may be different lengths in each copy of the document, so the length of lines changes as data is inserted. WordStar can realign each document at print time to format the text around the data.

.PF on aligns every paragraph in the document. **.PF off** turns print time reformatting off. **.PF dis** aligns paragraphs at WordStar's discretion, meaning that WordStar reformats only the paragraphs where data has been inserted in a variable. The aligning begins at the line where the insertion occurred. **.PF dis** is the default; if you don't use the **.PF** command in your form document, WordStar will use discretionary reformatting.

The example below shows text from a master document and actual printed text for one copy. The data in the printed document is longer than the variable names in the master. WordStar reformatted the text as it printed so it stayed within the margins.

This contract is entered into on the &day& day of &month&, &year& between &party1& and &party2&.

This contract is entered into on the twenty-seventh day of September, 1986 between Roberta Kachinsky and Anna Marie Casini.

If you are printing data that may extend beyond the text margins, you may want to use **.PF off** so that your lines won't wrap. Alternately, you can use **.AW off** to mark sections of text that you don't want aligned (see **Aligning a paragraph**).

> ***TIP*** *Reformatting may change page breaks. Use the* ***.CP*** *command if you want to keep certain lines of text on the same page. See* ***Page breaks****.*

When WordStar reformats, it uses the margins and line spacing that are in effect at that point. Use dot commands in the master document to control the format of the printed documents, including margins (**.LM**, **.RM**, and **.RR**), line spacing (**.LS**), and justification (**.OJ**). If you use onscreen formatting commands (**^OL**, **^OR**, **^OG**, **^OS**, and **^OJ**) instead of the corresponding dot commands, print time reformatting will not recognize the settings. For example, if you use **^OL** instead of **.LM** when you type the master document to change the left margin, print time reformatting will not use the margin you want.

Printing a form document

To merge print, press **M** at the Opening Menu. Type the master document name. If you press ↵, WordStar displays all the regular printing options. If you press **Esc**, printing begins immediately.

If you use the **P** command to print a document that contains merge print variables and dot commands, WordStar does not substitute data for variables, and the **.AV**, **.SV**, **.DF**, **.RV**, and **.MA** dot commands do not work.

See also **Command files**, **Data files**, **Merge printing conditional commands**, **Merge printing variable formatting**, **Merge printing variable number formatting**, **Messages while printing**, and Appendix B, "WordStar Examples and Tips."

Merge printing conditional commands

WordStar's conditional merge print dot commands allow you to use the same master document to produce letters that contain different types of data, depending on conditions you set. For instance, you can use one master document and one data file to generate letters that each contain one of several special paragraphs for different regions of the country.

There are three conditional merge print dot commands: **.IF** for "if," **.EI** for "end if," and **.EL** for "else."

The IF condition

WordStar usually determines if a condition is met by comparing one item with another. The items can be data items taken from a data file or items that never change (constants). Typically, one item is a data item and the other is a constant, but you can use any combination.

WordStar can compare items to determine whether or not they are the same (for text) or equal (for numbers) and if one comes before or after the other in alphabetical or numerical order. You tell WordStar how to compare items by using one of the following symbols, which are called operators.

Operator	Meaning
=	is the same as
<	comes before (alphabetically)
>	comes after (alphabetically)
<=	comes before or is the same as (alphabetically)
>=	comes after or is the same as (alphabetically)
<>	is not the same as (alphabetically)
#=	is equal to (numerically)
#>	is greater than (numerically)
#<	is less than (numerically)
#>=	is greater than or equal to (numerically)
#<=	is less than or equal to (numerically)
#<>	is not equal to (numerically)

The most common way to specify a condition to be evaluated with the **.IF** command is to use the following format.

.IF ***item1 operator item2***

For example, you can compare a merge print variable to a constant (a word, phrase, or number that does not change) as shown below.

.IF &PET& = dog

In this example, the condition is met if the data item for the variable **PET** is **dog**.

The operators that begin with the # symbol are used with numbers rather than with words. It is possible for either number item being compared to contain nonnumeric characters, but before WordStar proceeds with the comparison, it removes all the nonnumeric characters except – (the minus sign) and . (the period).

So, numerically the following items are equal because WordStar ignores all nonnumerals.

12.45
$12.45
abc1d2.dcs45

If each of these three items is in the **&amt&** field, and you use the following dot command, all three items would meet the condition.

.IF &amt& #= 12.45

However, if you use the operator without the # symbol, only the first item would meet the condition because numerals are considered to be alphabetic characters that come before **A**. Generally speaking, it is best to use the operators with the # symbol when comparing numbers.

You can also compare one data item with another, as in the examples below.

.IF &VAR1& > &VAR2&
.IF &VAR1& #> &VAR2&

The condition in the first example is met if the data for VAR1 comes after the data for VAR2 in alphabetical order. In the second example, the condition is met if the number in VAR1 is greater than the number in VAR2.

Normally, WordStar ignores any spaces that come between the operator and the following item. The following commands are equivalent.

.IF &PET&=dog
.IF &PET& = dog

In order for two items to be the same (=), they must have exactly the same characters (uppercase and lowercase are considered the same). If you know that a data item from a data file has spaces in front of the letters, you need to include the leading spaces in the comparison. To include spaces, enclose both the variable and the constant in quotation marks (or apostrophes). Thus, the condition shown below will be met only if the data in **&PET&** is **dog** preceded by 8 spaces.

```
.IF "&PET&" =    "        dog"
```

To use quotation marks in the constant along with leading spaces, enclose the entire item in apostrophes. To use an apostrophe in the constant along with leading spaces, enclose the entire item in quotation marks, as in the example below.

```
.IF "&PET&" =    "        dog's"
```

You cannot have quotation marks, apostrophes, and leading spaces in the same constant. If the constant has no leading spaces, you can use quotation marks and apostrophes freely anywhere.

Words are compared in alphabetical order. The word **cat** comes before the word **catalog** in alphabetical order, so the condition is met in the following examples:

```
.IF cat < catalog
.IF catalog > cat
```

In alphabetical order, numbers come before the letter **A**. For example, the following comparison is true.

```
.IF 2 < apple
```

You can also use the **.IF** command with just one variable name, as in the example below.

```
.IF &PET&
```

Notice that there is no operator. The condition is met if the data for **&PET&** is not zero and not blank.

The END IF command

The **.IF** dot command is followed by the action to be done when the condition is true. If there is text after the dot command, then that text will be printed. If there is another dot command after the **.IF** command, then the new dot command will be performed. When all the conditional text or commands are done, you must use the dot command **.EI** (End If).

What comes between .IF and .EI?

Almost anything can come between a **.IF** command and its corresponding **.EI**. In the following example, a paragraph of text is printed in the letter when the condition specified in the **.IF** command is true.

> **.IF &PET& = dog**
> **We know that your dog will love new BEEFO dog food, made from the highest quality beef and beef by-products. As an inducement for you to come in and look over our new facility, we are offering a 25-pound bag of BEEFO for just 10 cents, this week only.**
> **.EI**
> **.IF &PET& = cat**
> **Your cat will just love new FISHO cat food, made from real fish and aromatic herbs. Come in, look over our new facilities, and take home a 50-pound bag of FISHO for just 25 cents, this week only.**
> **.EI**

The ELSE condition

The previous example uses two IF statements to take advantage of two possible conditions (that is, if the variable **PET** is **dog** or if it's **cat**.) You can combine these two IFs into one. First, in English:

> If the data for the variable **PET** is **dog**, insert the file DOG.DOC; or else, insert the file CAT.DOC.

Notice that there is a slightly different meaning here. The file CAT.DOC will be inserted if the variable is anything other than **dog**; for example, if it's **fish** or if the data is missing.

The phrase "or else" translates into the **.EL** merge print dot command as shown below.

```
.IF &PET& = dog
.FI dog.doc
.EL
.FI cat.doc
.EI
```

The .GO command

The **.GO top/bottom** command tells WordStar to skip to the beginning or end of a file and then resume printing. It can be useful for conditional merge printing as shown in the example below.

```
.IF &PET& <> dog
.GO bottom
.EI
```

In this example, if the data for the variable **&PET&** is not **dog**, the rest of the text in the master document will not be printed in the current letter, and WordStar will skip to the bottom of the file before it starts printing again.

.GO t is the same as **.GO top**. **.GO b** is the same as **.GO bottom**.

Nested .IF commands

You can use conditional merge print commands to have WordStar choose among three or more alternatives by nesting the commands. For example, you might want to have a special dog paragraph in your letters to dog owners, a special cat paragraph to cat owners, and a general paragraph to all the other pet owners on your list. So your conditions are

> If the data for the variable **&PET&** is **dog**, insert the file DOG.DOC; or else, if the data is **cat**, insert the file CAT.DOC; or else, insert the file ANIMAL.DOC.

The commands for the conditions are shown below.

```
.IF &PET& = dog
.FI dog.doc
.EL
.IF &PET& = cat
.FI cat.doc
.EL
.FI animal.doc
.EI
.EI
```

Every **.IF** command must have a corresponding **.EI** command. The **.IF** command may or may not have a corresponding **.EL** command.

TIP *When you type nested conditional commands, you may want to indent each nested condition. Indenting can make it easier to work with nested IFs. However, if you indent, you must delete the indents before you print, because all dot commands must begin in column 1. The example below shows how the commands above appear with indenting. Note that each column begins with the* ***.IF*** *command and ends with the* ***.EI*** *command.*

```
.IF &PET& = dog
.FI dog.doc
.EL
     .IF &PET& = cat
     .FI cat.doc
     .EL
     .FI animal.doc
     .EI
.EI
```

The example below shows another way to use nested IFs. You want to send a letter to everyone on your list who lives in St. Louis, Missouri except for the people who live around the University of Missouri. ZIP codes in St. Louis range from 63101 to 63199, and the ZIP code for the university is 63121. You would create a command file with the following conditional merge print commands.

```
.IF &zip& #<= 63199
.IF &zip& #>= 63101
.IF &zip& #<> 63121
.FI letter.doc
.EI
.EI
.EI
```

The first **.IF** command eliminates ZIP codes greater than 63199, and the second eliminates codes less than 63101. The third **.IF** eliminates the 63121 ZIP code. Only ZIP codes that meet all three conditions will generate letters. All others will be ignored.

See also **Command files**, **Nesting and chaining**, and Appendix B, "WordStar Examples and Tips."

Merge printing variable formatting

Variable formatting allows you very close control of the appearance of your form documents, especially those that use merge print variables in tables or charts.

For variable formatting, you must first define formats for variables. You can use the **.SV** dot command to define each format. You can then include any format with any variable in the master document. After the variable name, but before the closing ampersand, type a slash (/) and the format name. For example, if you define a format named **6** and you want to use it with the **name** variable, when you enter the variable in the master document, type **&name/6&**.

You cannot use variable formatting and the **/o** option with the same variable. See **Merge printing**.

The sample format definition below defines the format named **6**.

```
.SV 6=LLLLLLLLLLLLLLLLLL
```

After the **.SV** comes the format name (**6**), followed by either an equal sign or a comma, then the format definition. You can use any digit or letter (except the letter **o**) as a format name. WordStar does not distinguish between uppercase and lowercase letters.

The number of characters in a format definition sets the number of spaces in the format. Each character in the definition represents one character space. In the example above, the format is twenty spaces wide because there are twenty Ls. So the total number of spaces and characters used to replace the variable in the form document is twenty.

The first letter in a format definition sets how the data will be justified within the format. It is either **L**, **R**, or **C**. **L** means that data is to be inserted into the format flush left, or left justified. **R** means that data is to be inserted flush right, or right justified. **C** means that the data is to be centered in the format. Again, WordStar does not distinguish between uppercase and lowercase letters. If the format definition does not begin with one of these characters, then WordStar assumes that the format is for numbers. See **Merge printing variable number formatting**.

If a data item is longer than the format, WordStar truncates the data item (removes the extra characters). If the field is left justified or centered, WordStar truncates any data left over at the right end of the data item. If the field is right justified, WordStar truncates from the left end of the data item.

If the first character is **L**, each **L** in the format definition will be substituted with data or, if there is no data for the corresponding position, with a space. If the first character is **R**, each **R** will be substituted with data or space, and likewise for **C**.

Any character (including a space) that is different from the first character in the field format definition is printed literally even if there is data for that position. For example, if the format is **LLXL** and the data item is 1234, WordStar prints **12X4**. The **X** is different from the **L** so it is printed literally.

This process is called masking because characters in the format definition mask out characters in the data item. The most common masking character is the space. You can use spaces in a format definition to the left of the first **L** or **R** in the definition. (Any other character used to mask can't be the first character in the format definition.) In order to include leading spaces in the format definition, you must enclose the definition in apostrophes or quotation marks. In the example below, there are two spaces between the initial quotation mark and the first **L**.

.SV 6= " LLLL"

If the data is **1234** the variable in the form document is replaced with

(two spaces)**34**(two spaces)

The leading spaces in the format definition mask out the first two characters of the data item. The last two **L**s in the format definition are replaced with spaces because the field is six characters long and the data is only four characters long.

Masking works only with left and right justified fields. When **C** is the first character in the definition, characters other than **C** are inserted into the data but do not replace any characters in the data.

Merge printing variable number formatting

You can use variable formatting to control the appearance of numeric data items that replace variables in your form documents. You can read the numeric data from a data file or use the WordStar **.MA** command to calculate numbers during merge printing.

First, you must set up formats for numeric variables using the **.SV** dot command. You can then include any format with any variable in the master document. After the variable name, but before the closing ampersand, type a slash (/) and the format name. For example, if you set a format named **3** and you want to use it with the **amount** variable, when you enter the variable in the master document, type **&amount/3&**.

The sample number format definition below defines the format named **3**.

.SV 3=$$,$$$.99

After the **.SV** comes the format name (**3**), followed by either an equal sign or a comma, then the format definition. You can use any digit or letter (except the letter **o**) as a format name. WordStar does not distinguish between uppercase and lowercase letters.

The number of characters in a format definition sets the number of spaces in the format. Each character in the definition represents one character space. In the example above, the format is nine spaces wide because there are nine characters. So the total number of spaces and characters used to replace the variable in the form document will be nine.

Numbers are always right justified in their formats. Several different symbols are used in number formats to specify what to do with any extra spaces at the left of the format (for example, print zeros or print spaces) and where to put decimal points and commas.

The list below shows characters you can use in a number format and how they work.

Character	Function
9	Substitutes a digit here. If there is no digit in the data item for this position, substitutes a zero. For example, if you use the format **99999.99**, the data **74.97** prints as **00074.97**.
Z	Substitutes a digit here. If there is no digit in the data item for this position, or if the digit is a leading zero, substitutes a space. For example, if you use the format **ZZZZZ.ZZ**, the data **74.97** prints as **(three spaces)74.97**.
*	Substitutes a digit here. If there is no digit in the data item for this position, or if the digit is a leading zero, substitutes an asterisk (or a zero after the decimal point). For example, if you use the format *****.**, the data **74.97** prints as ***74.97** and the data **74** is printed **as ***74.00**.
$	Substitutes a digit here if the digit is not a leading zero, otherwise, substitutes a space. Places a dollar sign to the left of the first digit. For example, if you use the format **$$$$$.99**, the data **74.97** prints as **(two spaces)$74.97**. Note that in this example, you can only use numbers up to 9999.99. In other words, with the **$**, you must have one more character in your number format than the largest number you expect to have as data.
-	Substitutes a digit here if the digit is not a leading zero, otherwise, substitutes a space. Places a minus sign directly before the first digit if the number is negative. For example, if you use the format **-$$$$$.99**, the data **-24.41** prints as **(two spaces)-$24.41**. As with the **$**, be sure to leave enough spaces in the format for the largest number you expect to have plus the minus sign and plus the **$** if you also use it.

. Puts the decimal point here. If the data has more decimal places than the format, the data is truncated (the extra digits are not printed). For example, if you use the format **9999.999**, the data **4.7888** prints as **0004.788**. If the data does not include a decimal point, the whole number is printed to the left of the decimal point. For example, with the same format, the data **1111** prints as **1111.000**.

, Puts a comma here. For example, if you use the format **99,999** the data **7497** is printed as **07,497** and the data **74** prints as **00,074**.

( ) Puts parentheses around a number if it is negative; otherwise, substitutes spaces. The parentheses must be the first and last characters in the format definition. For example, if you use the format **(****.99)**, the data **–74.97** prints as **(two spaces)(74.97)**. As with the **$** and **–**, be sure to leave enough spaces in the format for the largest number you expect to have plus the minus sign and the **$** if you also use it. For example, in order for the data –12345.67 to print correctly as a dollar amount, the format must have 6 characters within the parentheses before the decimal point. The shortest format for this example would be **($$$$$$.99)**.

The characters above are the only characters you can use in a number format. If you use other characters, the results are unreliable.

If data is longer than the format specified for it (except for extra digits after the decimal point), WordStar prints in the form document a series of question marks the width of the format.

Messages while printing

You can use the **.DM** and **.CS** dot commands in a document to affect the screen display while you print the document. They are useful for displaying messages that explain what's going on while you're printing. **.CS** clears the screen and **.DM** displays a message. These commands allow you to do the following:

- Show how much of a document has been printed.
- Display the data that's being inserted into variables during merge printing.
- Give reminders and instructions to the person doing the printing.

For example, you can type the following dot command at the beginning of Chapter 3 of a document.

.DM Chapter 3 is being printed now.

The following example shows how you can use these commands in merge printing when you have a long question or answer.

.CS Type the data for "union name" after the question mark.
.AV "? ",union-name
.DM Thank you.

During printing, when WordStar encounters the **.CS** command it clears the screen and displays

Type the data for "union name" after the question mark.
?

After you type the date and press ←┘, it displays

Thank you.

Messages are displayed only on the Printing screen. They are not displayed during background printing. To display the Printing screen, press **P** (or **^KP** if you're printing while editing) as soon as printing begins. If you display messages for most of your files, you may want to use WSCHANGE to change the background printing default.

See also **Merge printing**.

Microjustification

Many printers are capable of microspacing. With justified text, microspacing spreads the white space between words (and sometimes between the letters of each word) as evenly as possible. This is known as microjustification.

Some printers microjustify very slowly. You may want to turn microjustification off to speed things up. Use the **.UJ off** command to turn off microjustification; use **.UJ on** to turn it back on.

The default setting for microjustification is **dis** for discretionary. With the **dis** setting, the printer driver decides whether to microjustify or not. Printers that microjustify slowly won't microjustify unless you use **.UJ on**.

You can use WSCHANGE to permanently change the default. See Appendix C, "Customizing WordStar."

Naming a file

See **Files**.

Near letter quality printing

In addition to a draft-quality print, many dot matrix printers also have a high-quality print that is referred to as "near letter quality" or "correspondence quality."

The **.LQ on/off** dot command turns near letter quality printing on and off for those printers that have this capability. The default setting is on.

Near letter quality printing is often slower than draft quality printing. For quick drafts of your documents, use **.LQ off**. You can also change the default with WSCHANGE. See Appendix C, "Customizing WordStar."

> ***TIP*** ***.LQ 0*** *(zero) is the same as* ***.LQ off****;* ***.LQ 1*** *(one) is the same as* ***.LQ on****.*

Nesting and chaining

With the **.FI** dot command, you can link files for printing. You can chain them so that they print one after the other, or nest them, inserting one inside the other. The files are connected only for printing; their contents remain separate. **.FI** also works with the index and table of contents functions, allowing you to index a document that is made up of several files.

The **.FI** command means "insert a file here when printing." You can put the command anywhere in a file. Just be sure to start it in column 1, as you do any dot command. Note that because you can't put the **.FI** in the middle of a line, nesting can't begin in the middle of a line, either.

To insert a file, type **.FI** followed by the name of the file you're chaining or nesting. If the file is on a different drive or directory, include the drive letter or directory path, as in the examples shown below.

```
.FI b:part2.pkg
.FI \doc\part3.pkg
.FI d:\work\part4.pkg
```

If the file is on a different disk, you can use the **c** (or **change**) option. During printing, WordStar will pause and prompt you to insert the new disk. For example:

```
.FI b:addendum.pkg c
```

To chain files, put the **.FI** at the ends of the files. If you want the next document to begin on a new page, use **.PA** to insert a page break just above the **.FI** command.

To nest files, put the **.FI** where you want the next file to be inserted into the present one. Once the nested file is printed, printing of the original file resumes where it left off.

You can nest one file inside another, and those two inside a third, and those three inside a fourth, and so on. This causes all the nested files to be printed before the first one is finished. You can nest as many as eight files one inside the other. Beyond that, any additional nesting commands are ignored.

You can use either the **P** (print a file) command or the **M** (merge print) command at the Opening Menu to chain and nest documents. Use **M** when you're merging data files with the documents. You can also use **^KP** to print or merge print while you are editing.

At the **Document to print?** prompt, name the first file in the series. The **.FI** commands will cause WordStar to insert all the others on cue.

You can make a command file of **.FI** commands instead of putting them in the document. For example, if you have a document with five chapters, you can create a command file called BOOK.ALL, as shown below.

```
.FI b:chapter1
.FI b:chapter2
.FI b:chapter3
.FI b:chapter4 change
.FI b:chapter5
```

To start the printout, print the command file, BOOK.ALL. WordStar reads the file and prints each chapter on cue. Note that Chapters 1, 2, and 3 are on the first "b:" disk, and chapters 4 and 5 are on the second. Because of the disk change on the fourth line, the BOOK.ALL command file cannot be on drive B.

WordStar numbers chained and nested pages consecutively as if you were printing one long file.

The nesting level is very important during merging of data files and documents. The printout repeats only the file where the **.DF** command is.

See also **Command files** and **Merge printing**.

Nondocuments

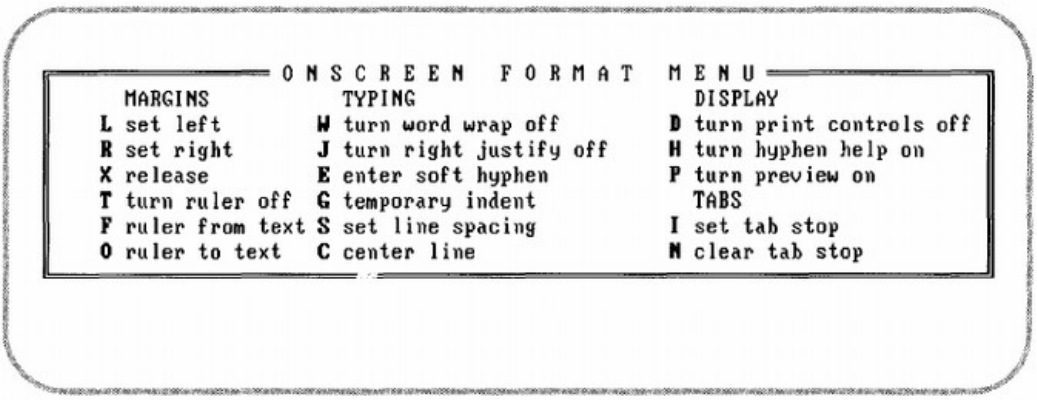
See **Documents and nondocuments**.

On/off commands

See **Toggles**.

Onscreen Format Menu

This menu contains commands that change the shape of the document on the screen and on the printout. The commands are grouped under four headings, **MARGINS**, **TYPING**, **DISPLAY**, and **TABS**.



To see the Onscreen Format Menu, press ^**O**. You can choose any of the commands from the menu by pressing the corresponding key. To cancel the menu without choosing a command, press the **Spacebar**.

WordStar displays the menu only if the help level is set to **2** or **3**. You don't need to see the menu in order to use its commands. Just enter the three keystrokes quickly and the menu doesn't appear. If the help level is set to **0** or **1**, the menu does not appear.

MARGIN commands allow you to work with left and right margins and ruler lines. See **Margins** and **Ruler lines**.

TYPING commands allow you to use several formatting features. See **Centering text**, **Hyphenation**, **Indenting**, **Justification**, **Line spacing**, and **Word wrap**.

DISPLAY commands allow you to control the display of commands and hyphen help. See **Hyphenation** and **Previewing**.

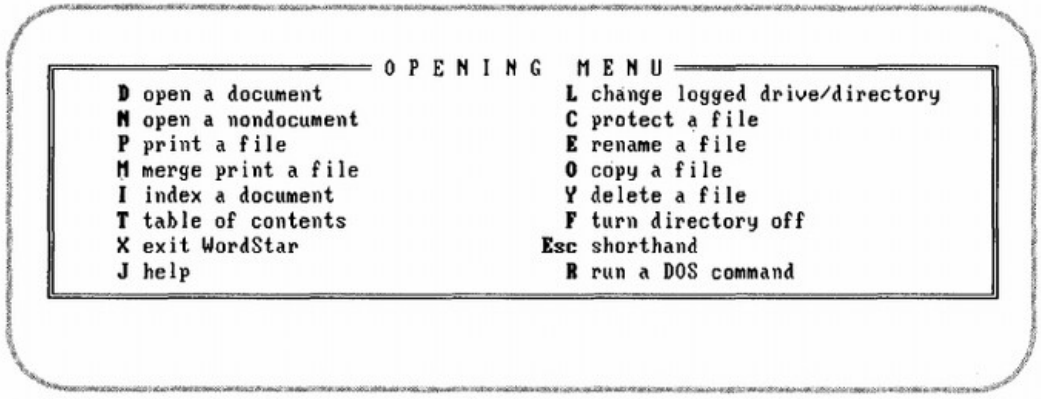
TABS commands allow you to set and clear regular and decimal tab stops. See **Tab stops**.

Opening a file

See **Creating a document or nondocument** and **Editing**.

Opening Menu

The Opening Menu appears when you start WordStar. It contains commands that allow you to start operations on files.



To choose a command at the Opening Menu, just type the command letter. To cancel an Opening Menu command before starting the operation, press **^U**.

For more information on the Opening Menu commands, see the appropriate "Reference Guide" entries.

Overprinting

You can overprint a character using the **^PH** command, and you can overprint a line using the **^P** ↵ command. These commands are described below.

Command	Function
^PH	Overprints a character. Two characters are printed in one space. After you type the first character, press ^PH. The symbol ^H appears at the cursor position. Then type the character to overprint. When you print, the character after the ^H prints on top of the previous character. To overprint more than two characters, press ^PH again before each additional character. If you overprint with the same characters frequently, you may want to use WSCHANGE to enter each character into the Auto Backspace table. After that, every time you type the character, WordStar automatically types ^PH before it so that it will overprint the previous character. See also Appendix C, "Customizing WordStar."
^P ↵	Overprints a line. Two complete text lines are printed on top of each other. First, type either of the lines. Don't let the line wrap to the line below; instead, end the line by pressing ^P and then ↵. A hyphen appears in the flag column. Then type the next line, and end it by pressing ↵. When you print, the two lines appear on one line. To overprint more than two lines, press ^P ↵ at the end of each line to be overprinted (that is, before the line to overprint it).

Page breaks

A page break is the division between two pages. It's shown on the screen as a line of hyphens across the screen ending with a **P** in the flag column. This line doesn't print. The line right after the onscreen page break prints as the first line of the next page.

WordStar inserts page breaks automatically, depending on the number of lines on a page. You can also insert page breaks anywhere you want to begin a new page.

To force a page break, use the **.PA** dot command. When you type **.PA** and press ←┘, a page break appears on the next line.

You can also insert a conditional page break, which is used only if necessary to keep a certain number of lines together. Conditional page breaks allow you to keep a table or chart on one page or to prevent a paragraph from breaking at the wrong place. Above the first line affected, type the **.CP** dot command followed by the number of lines to keep together. For example, if you type **.CP 4**, and there are only three lines available on the page below the command, the page break is inserted at the command. If there are more than four lines, the page break is where it normally would be.

> ***CAUTION*** *If you chain or nest files, or use print formatting commands for merge printing, the onscreen page breaks may not match those on the printout. This is because WordStar has no way of knowing how many lines will be in the inserted file or inserted data.*

See also **Page length**.

Page length

Page length is the total number of lines on a page. At the default line height of 6 lines per inch, a standard 11-inch page has 66 lines, which is the WordStar default page length.

The number of lines that actually print is determined by the page length in combination with the line height and the top and bottom margins. With all the defaults (page length of 66 lines, line height of 8/48 inch or 6 lines per inch, top margin of 3 lines, and bottom margin of 8 lines), each page contains 55 lines of text, not including footers or headers.

You can use the **.PL** dot command to change the page length. Type **.PL** followed by the new number of lines in a page. For example, **.PL 84** gives you a page length of 84 lines, the number on a legal-size (14-inch) page (6 lines per inch times 14 inches).

Changing the line height or the top or bottom margin alters the number of lines of text that can fit on a page. Smaller line heights and top and bottom margins mean more lines of text. WordStar automatically figures out the number of lines that can fit on a page. Dot commands that affect page breaks can be used wherever they are needed.

> ***TIP*** *To determine how many lines of text will fit on a page, first subtract the top and bottom margins from the page length. If your line height is not 8/48 inch (6 lines per inch), multiply the result by 8 and divide by the line height. The example below calculates the number of text lines for a page length of 66 lines, top margin of 3, bottom margin of 8, and line height of 10/48 inch.*
>
> (66–3–8) * 8/10 = 44

See also **Line height**, **Margins**, and **Page breaks**.

Page numbers

WordStar keeps track of a document's page numbers during editing and printing. When you edit, the current page number is displayed in the status line, following the letter **P**. Page breaks show where each page ends and the next begins. (Page numbers are not used with nondocuments.)

To move to a specific page, press ^**QI**, then type the page number and press ↵. WordStar stops at the first line it encounters for that page. If WordStar moves forward to find the page, it stops at the beginning of the page. If it moves backward, it stops at the end.

To change the page number that will be printed on a page, use the **.PN** dot command. Type **.PN** followed by the new page number; for example, **.PN 21**. This command is useful if you split a document into several files and want to set consecutive page numbers from one file to the next. It can also reset page numbers after a table of contents or other unnumbered section. You can use as many **.PN** commands in a file as needed.

If you use the **.FI** command to insert another file during printing, or if you use print time reformatting for merge printing, page numbers on the screen don't necessarily match those printed because WordStar doesn't know how many pages are in the file until it's printed.

WordStar usually prints the page number in a special footer line. Four dot commands control the printing of this default page number. They do not affect the page numbers you put in your own footers and headers. These dot commands are described below.

Command	Function
.PC	Prints the page number in the specified column. Type **.PC** followed by the column number. The default is column 28.
.OP	Omits printing of page numbers.
.PG	Turns printing of page numbers back on. This command is needed only if you previously used **.OP** to turn printing of page numbers off.
.PN	Numbers the current page as specified. Type **.PN** followed by the number to assign to the page. If you previously used **.OP**, this command also turns printing of page numbers on.

If you enter your own footer, printing of the default page number is automatically turned off. However, you can print page numbers in your own footers or headers. Put a number symbol (#) in the footer or header text at the spot where you want the numbers to print.

See also **Footers and headers** and Appendix B, "WordStar Examples and Tips."

Paragraph margins

The paragraph margin is a special left margin used only for the first line of paragraphs. It is useful both for indenting the first line of each paragraph and for "hanging" indents, where you want certain numbers or other characters to "hang" out to the left of the rest of the text.

To set a paragraph margin, type **.PM** followed by the column number where you want the first line of each paragraph to begin. For example, if you type **.PM 5** and your left margin is at one, the first line of each paragraph is indented to column 5. The remaining lines of each paragraph begin at column 1.

If your left margin is set to column 4 and you type **.PM 1**, the first line of each paragraph starts at column 1 and the remaining lines start at column 4. You can write a numbered list using these settings; the numbers stand out to the left of the text.

To stop using the paragraph margin, type **.PM 0** (zero) or **.PM** ↵. In text below this command, the margin for the first line of a paragraph is the same as the normal left margin.

Paths

You can divide a disk into directories and subdirectories. This lets you put hundreds of files into separate sections on one disk. Directories are used primarily on hard disks.

The operating system is often described as having a "tree structure." The basis of the structure is the "root directory." This directory (like other directories) can contain files and other directories.

For example, the root directory may contain a directory called DOCUMENT. This directory may contain several files and another directory called LETTERS, which in turn may contain more directories and files.

To access a file contained in the LETTERS directory, you must give WordStar a directory path to the file. The path consists of the names of all the directories that contain the desired directory, starting with the root directory and continuing in order from there. In the example above, the path has to tell WordStar to start at the root directory, go to the DOCUMENT directory, and then go to the LETTERS directory.

The format for a path is to start with the drive letter if it's different from the current drive, then name the root directory, and then name the rest of the directories in order. Each directory name is separated by the backslash (\ ) character. When the \ character is the first character after the drive in a path, it signifies the root directory. So the path for the LETTERS subdirectory on drive C is **C:\DOCUMENT\LETTERS**.

To log onto a particular directory, press **L** at the Opening Menu or **^KL** while you are editing. In response to the prompt, type in the path.

To access a file in a directory other than the logged directory, precede the filename with the path, again using the backslash character. For example, **\DOCUMENT\LETTERS\COVER.LET**.

It's best to give directories names that contain at least two characters. If you specify a path that consists of just a one-character directory name, WordStar may interpret it as a drive letter.

See also **Logged drive and directory** and Appendix E, "Making the Best Use of Directories and Memory."

Pause printing

Occasionally you may want your printer to stop while printing a document. For example, you might want to change the print wheel or insert an envelope.

You can insert the print control command **^PC** into your text to cause a pause in printing. Press **^PC** at the spot you want printing to pause. **^C** appears on the screen. When WordStar is printing the file and encounters this print control, it pauses. If you are printing in the background, the message **Print wait** appears in the status line. If you are editing, press **^KP** to display the printing screen. If you are at the Opening Menu, press **^P** to display the printing screen. When you are ready to resume printing, press **C**. To return to editing or the Opening Menu, press **B**.

You can also pause between pages by answering **Y** at the **Pause between pages** print option when you start printing. When printing pauses, the message **Print wait** appears in the status line. Use the procedure described above to display the printing screen and to continue printing when you're ready.

Phantom space and rubout

Print wheels often have a special character or two that are called "phantom characters" because they're not shown on standard keyboards. **^PF** prints the phantom character at a print wheel's hex code 20 (space) position. **^PG** prints the character at hex code 7F (rubout) position.

^PF and **^PG** also print some special characters on dot matrix printers and laser printers. You can change the phantom characters for these printers using WSCHANGE. See Appendix C, "Customizing WordStar."

When you press **^PF** or **^PG**, **^F** or **^G** appears on the screen. When you print the file, the phantom character is printed at that location.

Pitch

Pitch is the number of characters in an inch of text. WordStar's default normal pitch is 10, which is appropriate for pica type. It's expressed as 10 characters per inch (cpi). WordStar's default alternate pitch is 12 cpi, for elite type.

On wheel printers, when you change print wheels from pica to elite and back, it's usually best to change pitch, too.

To change to the alternate pitch (12 cpi), press **^PA**. To return to normal pitch (10 cpi), press **^PN**. When you use one of these commands, print control characters appear on the screen, but the onscreen pitch doesn't change.

To change the pitch on wheel printers, you must stop the printer and change the print wheel. To pause printing, enter **^PC** in your document, immediately before or after the change pitch command. During printing, when the printer pauses, switch the print wheels. Then press **C** to resume printing. See also **Pause printing**.

Be careful to coordinate left and right margins with pitch. On the screen, both pitches show 65 characters on the default line (left margin at 1, right at 65). But in the printout, the pica line will be 6½ inches long (65 divided by 10 cpi), while the elite line will be only 5½ (65 divided by 12 cpi).

The number of characters per inch of a pitch is determined by the character width. You can change character width within a document by using the **.CW** dot command. This command sets the character width of whichever pitch is in force when you type the command. For example, you can set the alternate pitch to 15 cpi by changing to alternate pitch (**^PA**) and typing **.CW 8** on the next line. Normal pitch is still 10 cpi, but you can change it too with another **.CW** command after you enter **^PN** to switch back.

You can also change the default character widths of normal and alternate pitch using WSCHANGE. See Appendix C, "Customizing WordStar."

See also **Character width**.

Place markers

Place markers can help you find your place in long files. Special commands allow you to set place markers and to move the cursor quickly to a marker. You can put up to ten place markers in a file.

To insert a place marker, move the cursor to the spot you want marked. Then press **^K** followed by a number from **0** to **9**. The number appears highlighted on the screen.

To move the cursor from anywhere in the file to a place marker, type **^Q** and the appropriate number. The cursor moves to the place marker.

You can hide the display of place markers and block markers by using the command **^KH**. If you set a place marker when you previously used **^KH** to hide the display of a marked block, WordStar redisplays the marked block and all place markers until you press **^KH** again.

To move a place marker, move the cursor to the new location and set the marker there. The marker disappears from the old location.

To remove a place marker, move the cursor to the marker and type ^**K** and the number for the marker.

Place markers are in effect only as long as you are editing the file. They are not saved when you leave the file.

Previewing

Dot commands and print control characters change the onscreen display of a document. You can remove these from the display while you are editing to get a preview of how the document will look when it is printed.

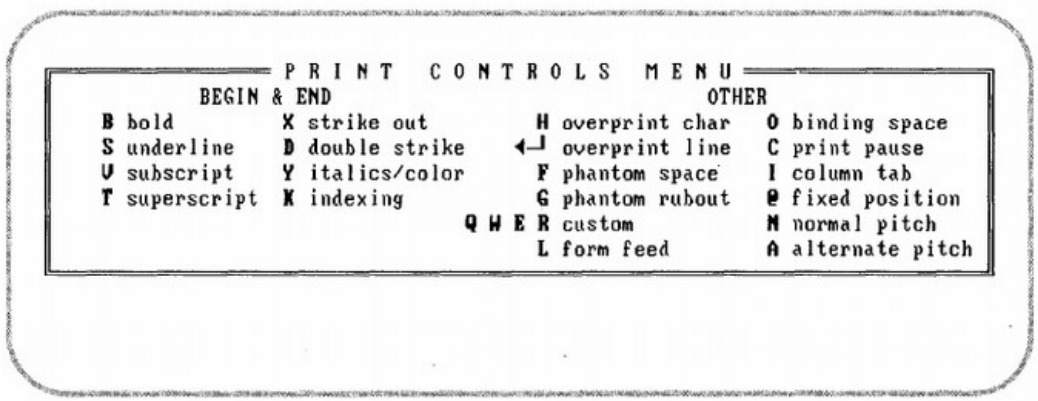
To remove print controls from the display, press ^**OD**. Any text that is highlighted remains highlighted, even though the print controls are not shown. Press ^**OD** again to redisplay the print controls.

To remove both dot commands and print controls from the display, press ^**OP**. WordStar hides the dot command lines and print controls and changes to the protected menus so that you cannot make changes to the document. To redisplay the dot commands and print controls and return to the regular menus, press ^**OP** again.

You can also use the PRVIEW printer driver to produce a disk file that serves as a preview of the printed document. See **Printing to disk**.

Print Controls Menu

This menu contains commands that affect the printed document. The commands are grouped under two headings, **BEGIN & END** and **OTHER**.



To see the Print Controls Menu, press ^**P**. You can choose any of the commands from the menu by pressing the corresponding key. To cancel the menu without choosing a command, press the **Spacebar**.

WordStar displays the menu only if the help level is set to **2** or **3**. You don't need to see the menu in order to use its commands. Just enter the three keystrokes quickly and the menu doesn't appear. If the help level is set to **0** or **1**, the menu does not appear.

BEGIN & END commands control features that you can turn on and off, like boldface and underlining. See **Boldface**, **Color**, **Double strike**, **Indexing**, **Italics**, **Strikeout**, **Subscript and superscript**, and **Underlining**.

OTHER commands control other printing functions. See **Binding space**, **Custom print controls**, **Form feeds**, **Overprinting**, **Pause printing**, **Phantom space and rubout**, **Pitch**, **Proportional spacing**, and **Tab stops**.

All print control commands are displayed on the screen in your text. For example, **^PB** is displayed as **^B** and **^PH** is displayed as **^H**. The text affected by some print controls is also highlighted. You can use **^OD** to see your text without the print control characters. See also **Previewing**.

Printer drivers

WordStar works with many wheel printers, dot matrix printers, and laser printers. For each supported printer, there is a printer driver, which is software that includes the appropriate information to make WordStar work with the printer.

For example, the driver named ML84 is designed to work with the Okidata Microline 84 Dot Matrix Printer. The driver takes advantage of the printer's correspondence mode to produce correspondence-quality print.

During installation, you install a default printer driver (see "Starting"). Each time you print a file, WordStar displays the name of the default printer driver when it asks you for the printer to use. You can change the default printer driver using WSCHANGE.

You can also tell WordStar at print time which printer driver to use to print a file. Just name the driver or select it from the list of printers at the **Name of printer?** option.

Because it is impossible to include printer drivers for every printer, WordStar provides several printer drivers that are not for specific printers. These drivers include three "generic" printer drivers, DRAFT,

TYPEWR, and AUTOLF, for draft, typewriter, and auto line feed. With most printers, you can use one of these three drivers. Two other printer drivers, CUSTOM and SIMPLE, allow you to customize your output using WSCHANGE. All these printer drivers are described below.

The **AUTOLF** printer driver is designed for printers that always advance the paper one line (a line feed) when the carriage is returned. In order to produce WordStar print enhancements, the printer must be able to backspace. WordStar normally produces line feeds itself. This driver tells it not to send line feeds because the printer does it.

The **DRAFT** printer driver is designed for printers that can perform a carriage return without a line feed. This driver will allow a printer to produce most of WordStar's print enhancements by overprinting a line.

The **TYPEWR** printer driver is designed for printers that can backspace one character at a time. It also allows a printer to produce most of WordStar's print enhancements by overprinting characters.

The **CUSTOM** and **SIMPLE** drivers allow you, in essence, to build your own printer driver. You can use WSCHANGE to install the control sequences recognized by your printer for boldface, underlining, and other print enhancements.

The SIMPLE driver is really simple. As it encounters print controls in the text, it sends the control sequence that you have defined for that control. SIMPLE makes one pass through the line from left to right. Many printers, however, aren't quite that easy to use. There are interactions between the various print controls, so if the SIMPLE driver doesn't produce the results you want, you may want to try the CUSTOM driver instead.

The CUSTOM driver is more sophisticated than the SIMPLE driver in that it can usually compensate for a missing control sequence in some way. For example, if you don't define control sequences for turning boldface on and off, the CUSTOM driver will instead overstrike the line several times. The SIMPLE driver, on the other hand, would not be able to print any boldface at all.

The best thing to do is to install as many strings as possible into WordStar and then try both SIMPLE and CUSTOM to see which one works better for your printer.

You have to enter many of the characters in your control sequences in hexadecimal notation. Check your printer manual very closely for the correct sequences.

If someone you know has already set up their printer for one of the drivers, you can easily transfer their control sequences to your copy of WordStar with the auto patcher.

See also Appendix C, "Customizing WordStar."

Printing a file

To print a file, press **P** (regular printing) or **M** (merge printing) at the Opening Menu or **^KP** while editing. When you press **^KP**, WordStar asks if you want to merge print. Press **Y** for merge printing or **N** for regular printing. You can print any file while editing, but if you print the same file you're editing, the most recent backup copy of the file prints, and you can't save the file until printing is done.

WordStar displays the prompt **Document to print?**. Type the filename and press ↵. The seven print options appear, one at a time. At each print option, you can type an appropriate response and press ↵, or you can just press ↵ to select the default for the option.

If you press **Esc** instead of ↵ after entering the filename or at any of the options, the defaults are used for any remaining options, and WordStar prints the file immediately.

The print options and their defaults are described below.

Number of copies? You can print more than one copy of the document. The default is one copy.

Pause between pages? If you need to feed individual sheets of paper to the printer, you must pause between each page, so press **Y** for yes. The default is no.

Use form feeds? If you want WordStar to use form feeds when moving to the next page of a printout, answer **Y** for yes. To use a sheet feeder, you must answer **Y**. The default is no.

Starting page? You can start printing at any page. The default is page 1. You can specify that only even or odd pages are to be printed by putting an **E** or **O** immediately after the page number. You can also specify individual pages and ranges of pages to print. Type the first page number of a sequence, a hyphen, and the last page number in the sequence. Separate individual page numbers with commas. For example, to print pages one through three and page five, type **1–3,5**. When you type page numbers in this manner, WordStar skips the **Ending page?** prompt.

Ending page? You can end the printing at any page. The default is the end of the document.

Nondocument? To print a nondocument, press **Y** for yes. WordStar uses the defaults for the page layout. You can also print a document as if it were a nondocument, which means that all the dot commands are printed and not executed. The default is no.

Name of printer? You can use more than one printer with WordStar. The default is the printer you chose during installation (or with WSCHANGE). A menu of printer drivers appears below the prompt. To select a printer other than your default, you can type a printer driver name and press ↵, or you can move the cursor to a name on the menu and press ↵. See also **Printer drivers**. If you select a printer driver other than the default, WordStar uses the alternate printer port, which you can select using WSCHANGE.

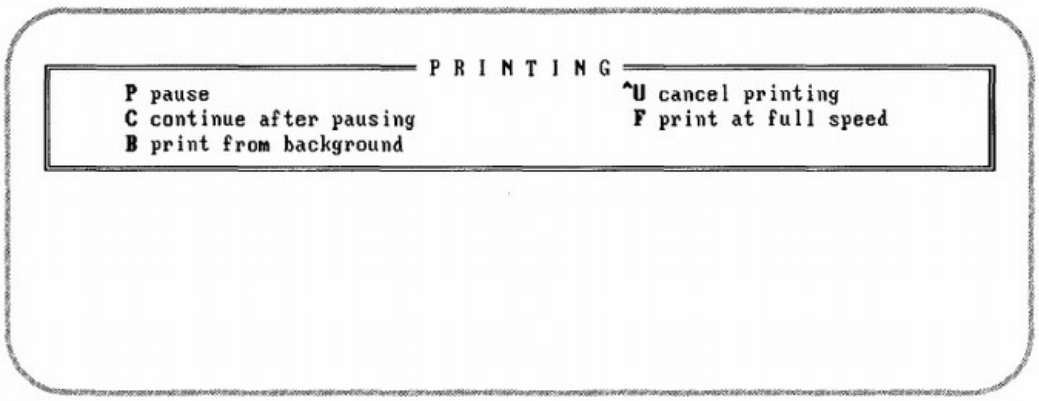
> ***TIP*** *To print a file to disk instead of on a printer, type the symbol > and then a filename after the printer name. See also* ***Printing to disk****.*

After you answer the last prompt (or press **Esc**), printing begins.

Printing is normally done in the background. This means that you can continue with what you were doing before you started printing. **Printing** appears at the right of the status line. If printing stops during background printing, **Print wait** replaces **Printing**. You can use WSCHANGE to turn background printing off. This makes printing somewhat faster.

> ***TIP*** *The default speed for printing is full speed. If your printer can't receive the input fast enough, you may notice a time lag between pressing keys and the resulting onscreen operation. You can change to a slower speed to eliminate this lag. Use WSCHANGE to change printing speed. See Appendix C, "Customizing WordStar."*

Messages and commands related to printing are shown on the Printing screen, which is hidden during background printing. You must display the Printing screen before you can see a printing-related message or enter a printing-related command during printing. To display the Printing screen during background printing, press **P** from the Opening Menu or **^KP** while editing.



Messages appear below the Printing screen commands. The commands are described below.

Command	Function
P	Pauses printing temporarily.
C	Continues printing after a pause.
B	Starts background printing, returning you to editing or to the Opening Menu depending on where you were before the Printing screen appeared.
^U	Cancels printing completely and returns you to editing or to the Opening Menu depending on where you were before the Printing screen appeared.
F	Starts full-speed printing if you have used WSCHANGE to install a slower printer speed.

During printing, the Printing screen status line shows the page number that is currently printing. It also shows the copy number that is currently printing. This is useful if you are printing more than one copy of a document.

If you have two printers attached to your computer, you can use WSCHANGE to specify a primary and an alternate output port, one for each printer. Whenever you use the printer you have installed as the default, WordStar uses the primary output. If you specify any other driver after **Name of printer?**, the alternate output is used. See also **Printer drivers**.

See also Appendix C, "Customizing WordStar."

Printing multiple copies

You can print a file as many times as you want in one printing session. In most cases, the best way to print multiple copies is to use the **Number of copies?** print option. See **Printing a file**.

The **.RP** (repeat printing) command also prints multiple copies of a file. Use it instead of the print option if you want to make sure the file is always printed a certain number of times or if you want to print multiple copies of a file that is nested or chained in another file. Type **.RP** followed by the number of times you want the file to be printed, for example, **.RP 5**.

Don't use **.RP** in a master document that uses a data file. If you want to print multiple copies of each copy of the form document, use the **Number of copies?** print option.

Printing to disk

Sometimes you may want to "print" a document into a file on disk rather than printing it out on paper. For example, you can use this function to make sure that your merge print letters will turn out the way you expect.

You can print to disk either by using one of three special printer drivers or by adding a filename when you choose a printer at the **Name of printer?** print option. Both methods are described below.

The special printer drivers

WordStar allows you to choose any of three "printers" that make disk files rather than sending text to a regular printer. They are named PRVIEW, ASCII, and XTRACT. You can select one by typing its name in response to the last print option, **Name of printer?**.

The PRVIEW printer driver produces a file named PRVIEW.WS, which looks as much like an actual printout as possible, with headers and footers and with data inserted if you are merge printing. It begins with the **.PL** command so that the page breaks will appear in the proper spots when you later look at the file in document mode. Each line ends with a hard carriage return.

The ASCII printer driver produces a file named ASCII.WS, which is an ASCII version of the document with all print controls, dot commands, and high-order bits on characters removed. Each line ends with a hard carriage return.

The XTRACT printer driver produces a file named XTRACT.WS. This file is similar to PRVIEW.WS, but does not contain headers, footers, or page breaks, and does have soft carriage returns. This format allows you to perform some simple manipulations on text and data files. For example, you might have a large data file with several fields, like the following example.

Angela Medina, "Manager, Acquisitions", Paint City
1234 Hackitt St., Newark, NJ, 08055
Robert Power, , Farmer Store, 11 Locust Way, St. Louis
MO, 65412
Franca Long, Senior Buyer, "Fashions, Inc.", 1100 Vine St.
Hollywood, CA, 90023
Greg Hall, , , 1234 Klamath Road, Portland, OR, 97512

You can use the XTRACT printer driver to make another data file that contains only information from the "name" field of the file above. If the file above is named FORM1.DTA, you can make a document for merge printing named FORM1.LTR as shown below.

.OP
.DF form1.dta
.RV NAME,TITLE,COMPANY,ADDRESS,CITY,STATE,ZIP
&NAME&

Note that this file ends with a carriage return after **&NAME&** so that each name will print on a separate line.

When you merge print FORM1.LTR and ask WordStar to use the XTRACT printer, the output file is named XTRACT.WS and contains the information shown below.

Angela Medina
Robert Power
Franca Long
Greg Hall

The files PRVIEW.WS, ASCII.WS, and XTRACT.WS are created each time you use the PRVIEW, ASCII, and XTRACT printer drivers. If you want to keep a copy of one of these files, rename it before using that printer again. Alternately, you can give one of these files a different

name by specifying it when you choose the printer driver at the **Name of printer?** print option, as explained in the next section, "Sending printer-formatted output to a file." In the example above, to name the output file NAME.DTA, type **xtract > name.dta** at the **Name of printer?** option.

See also **Printer drivers**.

Sending printer-formatted output to a file

You can tell WordStar to run a file through a specific printer driver and send the output to a file, rather than sending it to the printer. To do this, answer all the printer prompts. At the last prompt, **Name of printer?**, first type the printer name, then the > symbol, then a filename. For example:

Name of printer? ML84 > OUTPUT.DOC

In this example, WordStar creates a file named OUTPUT.DOC on the disk. This file contains all the text of the document, along with any special characters WordStar normally sends out to control an Okidata Microline 84 printer.

You can use this feature if you're word processing on a computer not connected to the printer. It produces a copy of the document formatted with all the proper codes for the printer. You can then take the file on a floppy disk to a computer connected to the printer and print the file using the DOS COPY command. For the example above, if your printer port is LPT1, type **COPY OUTPUT.DOC LPT1**.

Print options

See **Printing a file**.

Prompts

A prompt is an onscreen message that asks you to type an answer or gives you directions.

In answering a prompt, you can sometimes type as many as 80 characters. When you reach WordStar's limit or the right edge of the screen, the cursor stops.

> ***TIP*** *Sometimes when the cursor stops at the right edge of the screen, you have not reached the 80-character limit. To enter a long response, you can enter the right portion of the response first. Then use* ***^S*** *to move to the left and insert the left portion.*

For many prompts, you can use the **^R** (repeat) command to repeat the information entered the previous time you saw a similar prompt. It's handy for specifying the same filename for several different functions. For example, if you edit a document and then want to print it right away, press **^R** when you're asked for the name of the document to print, instead of typing the name.

Proportional spacing

Proportional spacing means that each character is allocated space that is proportional to the character's actual width. For example, an **i** is narrower than an **m**, so it is allocated less horizontal space in the line when printed. In monospacing (nonproportional spacing), all characters are allocated the same horizontal space regardless of the actual character width.

Many of the printer drivers in WordStar support proportionally spaced printing. Use the **.PS on** dot command to turn on proportional spacing and use **.PS off** to turn it back off.

WordStar uses a character-width table in the printer driver to determine how much space to allocate for each character. However, the character-width tables are not available to WordStar while you are editing a document, so WordStar assumes the characters are monospaced during editing.

If you turn justification on or off in proportionally spaced text, always use the **.OJ** command. If you use **^OJ**, your text may print incorrectly.

At print time, when the printer driver encounters the **.PS on** command, it selects the most appropriate proportional typeface from those available on the printer. The selection is based on the character width (**.CW**) currently in effect. If right justification is on, WordStar determines the width of a line by multiplying the "normal" character width (usually 12/48 inch, or **.CW 12**) by the number of characters in the line. The printer driver then adjusts the spaces between words and the spaces between characters to fill the line.

If you have many words or phrases in uppercase, or if you want your text less densely printed, you should choose a larger character width. If your text looks like it is "spread out," choose a smaller character width.

You can use WSCHANGE to change the proportional character-width tables for a printer driver if necessary. The most common widths are used as the defaults.

See the file README on your WordStar Installation Disk to find out what your printer can do.

> ***TIP*** *In proportionally spaced text, columnar text such as tables does not necessarily line up on paper the way it does on the screen. You can use the* ***^P@*** *command to print the text in a specific position. Place the cursor in the column where you want the text to start and press* ***^P@****. ^@ appears on the screen (it won't be printed). Type the text. In the example below, if you want the text to start in columns 8 and 30, move to column 8 and press* ***^P@****, then type* ***testing****. Move to column 30 and press* ***^P@****, then type* ***does*** *and press ↵. On the next line, in column 8 press* ***^P@*** *and type* ***column****, and in column 30 press* ***^P@*** *and type* ***this****. Follow the same procedure on the third line for* ***alignment*** *and* ***work?****.*
>
> **^@testing** **^@does**
> **^@column** **^@this**
> **^@alignment** **^@work?**

Protecting a file

You can protect a file so it can't be inadvertently changed, and you can later unprotect it. Protect your own files if you share disks with other operators. Protect master versions of form documents, and final drafts of any documents. You can protect both documents and nondocuments.

To protect a file or to remove the protection later, press **C** at the Opening Menu. Then type the filename (including drive letter or directory path if necessary) and press ↵. WordStar shows whether the file is currently protected or not and asks if you want to change it. If you press **Y**, the status changes to its opposite. Pressing **N** or **^U** cancels the operation.

When you edit a protected file, protected versions of all the menus appear instead of the regular menus. The protected menus have fewer commands than the regular menus. All commands that would enable you to change the file have been removed. You can read a protected file and copy it, but you can't add or delete anything.

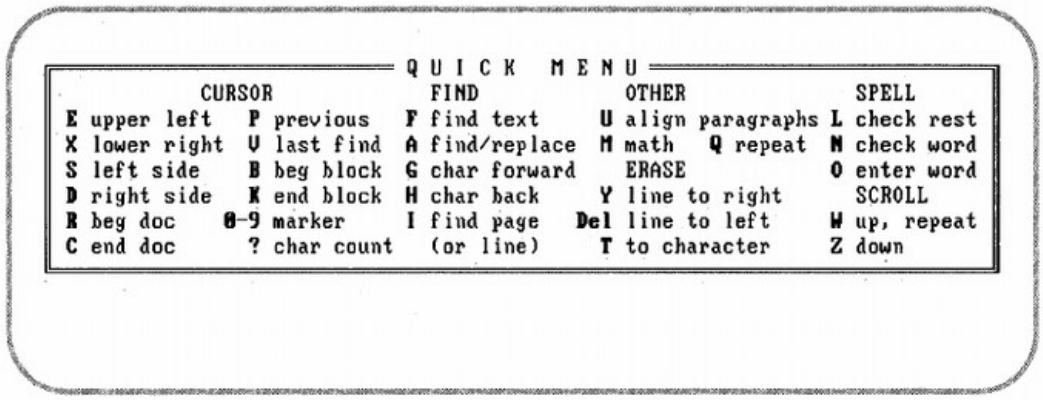
The protected menus also appear when you edit a file that has the filename extension of .BAK. Backup files are automatically protected from changes as a safety measure.

Protecting files is useful with a local area network (LAN). If you are running WordStar on a LAN, contact MicroPro for information about LANs and site licensing.

Q

Quick Menu

This menu contains quick versions of many Edit Menu commands. It also contains commands for finding and replacing and for checking spelling while editing. The commands are grouped under six headings, **CURSOR**, **FIND**, **ERASE**, **SPELL**, **SCROLL**, and **OTHER**.



To see the Quick Menu, press ^**Q**. You can choose any of the commands on the menu by pressing the corresponding key. To cancel the menu without choosing a command, press the **Spacebar**.

WordStar displays the menu only if the help level is set to **2** or **3**. You don't need to see the menu in order to use its commands. Just enter the three keystrokes quickly and the menu doesn't appear. If the help level is set to **0** or **1**, the menu does not appear.

CURSOR commands are Quick Menu versions of several Edit Menu cursor commands. They move the cursor over greater distances than the corresponding commands without the **Q**. See **Cursor movement and scrolling**.

FIND commands find and replace text. See **Finding and replacing**.

ERASE commands are Quick Menu versions of several Edit Menu erase commands. They erase parts of lines and all text to a specific character. See **Deleting text**.

SPELL commands let you check the spelling of words while you are editing. See **Spelling check**.

Quick **SCROLL** commands scroll the text continuously. See **Scrolling**.

Quick **OTHER** commands align an entire document, access the math functions, and repeat other commands. See **Aligning a paragraph**, **Calculator**, and **Repeating**.

Reforming a paragraph

See **Aligning a paragraph**.

Renaming a file

To rename a file, press **E** at the Opening Menu or **^KE** while editing. WordStar asks for the file's current name. Type the name and press ↵. Include a drive letter or directory path if necessary. WordStar asks for the new name. Type the new name and press ↵.

Repeating

The repeat command, **^QQ**, continuously enters an Edit Menu command or a keyboard character until you stop it. You can use it for a repetitive task, such as scrolling screen by screen toward the end of the file (**^QQ^C**).

To begin repeating, press **^QQ**, followed by the command or character to be repeated. The cursor moves through the file, repeating the specified action.

To stop repeating, press the **Spacebar**.

To vary the speed of the repeat command, use the number keys at the top of the keyboard. Press **0** for the fastest repetition, **9** for the slowest, or another number between **0** and **9** for the speed you want.

> ***CAUTION*** *If you don't press* ***Ctrl*** *as you enter the command to be repeated, the character repeats instead. For example,* ***^QQ^C*** *scrolls down screen by screen.* ***^QQC*** *repeats the character* ***C****.*

Replacing

See **Finding and replacing**.

Return key

See **Enter key**.

Ruler lines

The ruler line is a display of a document's left and right margins and tab stops. It is displayed at the top of the screen during editing. Ruler lines are not used with nondocuments.

WordStar's default ruler line is shown below. It's designed for pica type and 8½-inch-wide paper. It has the left margin at column 1, the right margin at column 65, and tab stops every five spaces beginning at column 6. It has no paragraph margin and no decimal tabs.

```
L----!----!----!----!----!----!----!----!----!----!----!--------!
```

The ruler line can contain the following characters:

Character	Meaning
L	Left margin
R	Right margin
P	Paragraph margin
!	Tab stops
#	Decimal tabs
-	Columns between the margins
V	Temporary indent

The example below shows a ruler line for text with the left margin in column 1, the paragraph margin in column 6, the right margin in column 31, tab stops in columns 11 and 13, and a decimal tab stop in column 26.

```
L----P----!-!----------#----R
```

The ruler line can be displayed at all help levels. Press **^OT** to turn the display of the ruler line on and off. You don't have to display the ruler line to change it.

When you change the left or right margin, the paragraph margin, or a tab stop, the ruler line changes to show the new margin or tab. If you change a tab stop or use **^OL** or **^OR** to change a margin, the new ruler line is in

effect throughout the document until you change it. If you use the **.LM**, **.RM**, or **.PM** dot command to change a margin, the new ruler line is in effect in the file below the dot command line. Above the dot command line, the previous ruler line is in effect.

When you use **^OG** to set a temporary margin, the ruler line shows the temporary margin with a V as long as it's in effect.

You can embed a ruler line in the text so it's in effect in the text below it and is stored with the file. Every time the cursor moves below an embedded ruler line, the document's margins and tabs automatically change to those in the ruler line. An embedded ruler line is entered with the **.RR** dot command. There are two ways to enter a **.RR** ruler line.

- Type the entire ruler line. Start by typing the **.RR** command. Then, on the same line, type the ruler line itself, using the symbols shown above. To set the left margin at column 1, type a hyphen immediately after the command; do not use an L. To set the left margin in column 2 or 3, use an overprint line (with **^P** ↵) and type the **L** in the desired column. To put the left margin further to the right, type an **L** in the appropriate column.

  In the first example below, the **.RR** ruler line shows the left margin in column 1, a tab at 8, a decimal tab at 12, and the right margin at 15. In the second example, the left margin is in column 6 (two spaces are between the second R and the L) and the right margin at 15.

  .RR----!---#--R

  .RR L--------R

- Press **^OO** to insert a copy of the current ruler line into your text. The first three characters in the ruler line are changed to **.RR**. If the left margin was in column 2 or 3, it is changed to column 1.

  TIP *You can create a ruler file to store the ruler lines you use most frequently, along with related formatting instructions. Use* ***^KR*** *to read the ruler file into documents later and erase the ruler lines you don't want.*

You can use the **^OF** command to use a ruler line in the text. First type a ruler line in your document (without the **.RR**). Begin the ruler line with **..** or **.IG** so it won't be printed when you print the file. Then put the cursor anywhere on your ruler line and press **^OF**. WordStar reads the ruler line and changes the current margins and tabs to the ones you typed.

If you press **^OF** when the cursor is in a line of regular text rather than in a ruler line, WordStar changes the left and right margins to correspond to the left and right margins of the text line.

See also **Indenting**, **Margins**, and **Tab stops**.

Running a DOS command

You can run most DOS commands from the Opening Menu (using the **R** command) or during editing (using the **^KF** command).

For example, while you're editing a file, you can find out how much space is left on your disk without losing your place in the text. Press **^KF** and then use the DOS CHKDSK command to display the remaining disk space and memory.

To run a DOS command, you must have enough memory available to hold not only the program you want to run, but also WordStar, WordStar's data areas, the operating system, the DOS COMMAND.COM command processor, and any other resident program that you may be running. If you have a two floppy disk system and COMMAND.COM is not on your disk, you are prompted to insert your DOS disk.

Additionally, you shouldn't run a program that stays memory resident (such as the DOS PRINT program or Sidekick). DOS gives the resident program all of WordStar's memory also. For example, if WordStar is using 300K bytes, that 300K is attached to the resident program after you exit from WordStar, even though the program doesn't use it. If you plan to use a memory-resident program from inside WordStar, put it in memory by running it from DOS *before* you start WordStar.

If you run a second copy of WordStar, don't edit the same file that's already open in the first copy of WordStar, unless you have used WINSTALL or WSCHANGE to install WordStar for a shared file system. If you do, you may lose some of your work or you may not be able to save the file later.

> ***TIP*** *You can run several DOS commands in a row without returning to WordStar between commands. Just press* ***^KF****, then type* ***command*** ↵ *to run the DOS command processor. It looks as if you have exited WordStar, but you really haven't. You can run commands as if you were in DOS. When you are done with your DOS commands, type* ***exit*** ↵*. Then press any key to return to WordStar.*

S

Saving a file

Saving a file stores it on the disk.

When you open a document, the original file actually stays on the disk while you work on a copy in the computer's working memory. When you save the document, the copy in memory (with all your changes and additions) goes back to the disk and replaces the original file. The original file is saved as the backup file, with the .BAK filename extension.

Use the following commands for saving files.

Command	Function
^KS	Saves the file, then resumes editing in the same place. It's a good practice to press **^KS** periodically while you're working in a file, to guarantee that you won't lose the work you've done if you have a power failure or another problem.
^KD	Saves the file, then goes to the Opening Menu.
^KX	Saves the file, then exits to the operating system.
^PrtSc	Saves the file, then prints it. You can select print options as with regular printing. This command cannot be used for merge printing.
^KQ	Quits the file without saving any current changes. The saved document is the same as it was before you opened it (or the last time you used **^KS**). If you have made any changes, WordStar asks if you really want to quit the file.
^KW	Saves a block and stores it as a separate file on disk. See **Blocks**.

Scrolling

Most screen displays are 80 columns wide by 25 lines long. Your files may be wider (up to 255 columns) and longer (many pages). Scrolling enables you to see all of your file one screen at a time.

When you edit a file with lines wider than 80 columns, horizontal scrolling occurs automatically when you type or move the cursor past the right edge of the screen. When scrolling changes the display so you can't see the left margin, you can press **^QS** to go to column 1 of the line.

Several commands allow you to scroll vertically, either line by line or page by page.

Command	Function
^W	Scrolls up a line (the text moves down).
^Z	Scrolls down a line (the text moves up).
^R	Scrolls up a screenful. The cursor goes to column 1 on the previous screen.
^C	Scrolls down a screenful. The cursor goes to column 1 on the next screen.
^QW	Scrolls continuously up, one line at a time.
^QZ	Scrolls continuously down, one line at a time.

With **^W**, **^Z**, **^QW**, and **^QZ**, the cursor stays where it was in the text, in the same line and column position, until the line is scrolled off the screen. Then the cursor goes to column one in the top or bottom line on the screen.

With **^QW** and **^QZ**, you can control the speed of the scrolling by typing a number, 0 through 9, during scrolling. 0 is fastest; 9 is slowest.

Sheet feeders

You can control multiple-bin sheet feeders directly from WordStar with the **.BN** dot command.

Sheet feeders are controlled by special sequences of characters, or strings. With WSCHANGE, you can install up to five sets of strings to control a sheet feeder. Four sets control up to four separate bins, and the fifth set is used to eject the last page of a document from the printer without loading a new sheet.

After you install the proper control strings, you control the sheet feeder by using the **.BN** dot command in your documents, followed by a number from 0 to 4. If the number is 0, the sheet feeder is disabled. Otherwise, the number specifies the bin to load the next sheet of paper from.

You must type the **.BN** command before the first printing character on the page. For example, to load the first sheet of paper for a document from bin 1, the command **.BN 1** must appear at the beginning of the document. To load page 2 from bin 2, you must type the command **.BN 2** in the document before the first printing character on page 2.

Most sheet feeders require a special form feed character to be used to indicate when to load the next page. When you print a file using a sheet feeder, answer **Y** to the **Use form feeds?** print option. You can install this option as a default using WSCHANGE. See also **Form feeds**.

Usually, sheet feeders require a special page layout, because the sheet feeder itself forces a top margin. You need to change the top margin or page length or both to compensate for the sheet feeder's margins. You can use dot commands to change the top margin or page length in a document, or you can change the margins permanently with WSCHANGE.

The following example is for a sheet feeder with three bins. Bin 1 contains letterhead, bin 2 contains plain paper, and bin 3 contains envelopes.

```
.MT2
.HM1
.HE Document header
.PL 62
.BN 1
This is the first page of text. It is loaded from bin 1.
.PA
----------------------------------------
.BN 2
The second page is loaded from bin 2.
.PA
----------------------------------------
The third page is also loaded from bin 2.
.PA
----------------------------------------
.BN 3
.PL 20
The fourth page (envelope) is loaded from bin 3.
Because it is the last page, it will be ejected
without another page being loaded.
.PA
----------------------------------------
```

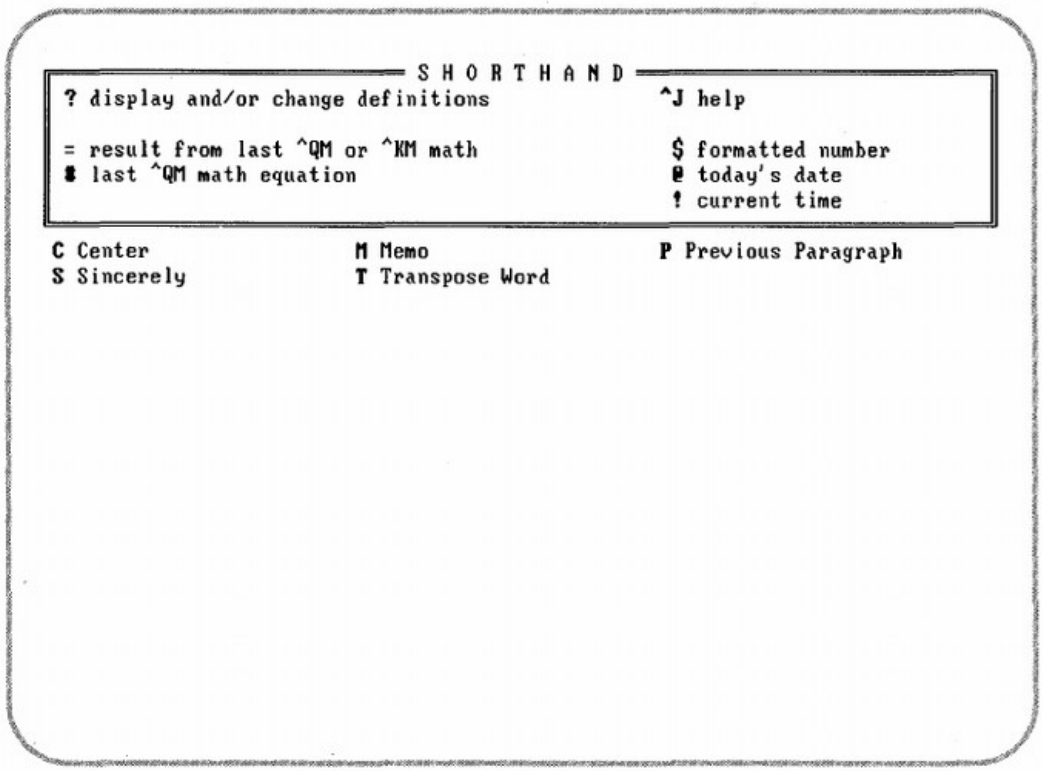
See Appendix C, "Customizing WordStar," for more help with installing the strings.

Shorthand

WordStar's shorthand feature allows you to replace many keystrokes with just two: **Esc** plus a letter or number. You can define up to 36 shorthand characters to represent commonly used words, phrases, and commands. You can also use several commands on the Shorthand Menu to insert special text in your file.

To use a shorthand character while editing, place the cursor where you want to insert the character's definition. Then press **Esc** and the character. The definition of the character appears in your text.

You can look at the current shorthand characters and define new ones either while editing or at the Opening Menu by pressing **Esc**. The Shorthand Menu appears.



The commands on the Shorthand Menu are described below.

Command	Function
Esc ?	Displays definitions. You can then define new shorthand characters, redefine current ones, or look at the current definitions.
Esc ^J	Displays onscreen help for shorthand.
Esc =	Inserts the result of the last mathematical calculation (**^QM** calculator or **^KM** block math) into your text at the cursor position. If you're at a decimal tab (**Decimal** appears in the status line), the number is aligned at the decimal point.
Esc $	Formats the result of the last mathematical calculation as a dollar amount and inserts it into your text at the cursor position. The dollar format has two digits to the right of the decimal point and commas every three digits to the left of the decimal point. For example, if the last result was **1234.5**, pressing **Esc $** inserts **1,234.50** into the document. You can change the dollar format with WSCHANGE.
Esc #	Inserts the last math equation you entered using the onscreen calculator (**^QM**) into your text at the cursor position.
Esc @	Inserts today's date into your text if your operating system date is set properly. An example of the date format is **September 28, 1987**. You can change the date format with WSCHANGE. (The same format is used by the merge print variable **&@&**.)
Esc !	Inserts the current time into your text if your operating system clock is set properly. An example of the time format is **9:30 AM**. You can change the time format with WSCHANGE. (The same format is used by the merge print variable **&!&**.)

The shorthand characters appear below the Shorthand Menu. They are user-defined. You can use the 26 letters of the alphabet and the 10 digits as shorthand characters. Shorthand characters do not appear below the

menu until they are defined. The screen above shows the letters **C**, **M**, **P**, **S**, and **T** as shorthand characters. These characters are already defined when you receive WordStar. You can use them as they are, change them, and add more characters as needed.

Immediately following each shorthand character is a description to help you remember what the character does. You can use any description up to 50 characters long. The description just describes the function; it isn't the actual definition. It's best to keep descriptions short to conserve memory.

To define a shorthand character, type **Esc ?** (or **?** from the Shorthand Menu.) The shorthand definitions screen appears, as shown below.

```
                              S H O R T H A N D
To change a definition, enter a number or letter from the table below.
To create a new definition, enter a new number or letter.
To put a control key into a definition, press ^P, then the control key.
Character to be defined?    (Enter ←┘ when done.)


MENU & KEY DEFINITIONS   Bytes available: 402
C   Center
    ^OC
M   Memo
    Memorandum
P   Previous Paragraph
    ^A^QH^M^F
S   Sincerely
    Sincerely,^M^M^M
T   Transpose Word
    ^T^F^U
```

Under the heading MENU & KEY DEFINITIONS is a list of all the currently defined shorthand characters, along with their description for the Shorthand Menu and the actual definition. The "Bytes available" tells you how much memory is left for more definitions. (You can set aside more memory with WSCHANGE. The default size is 512 bytes.)

If all the shorthand definitions don't fit on the screen, use **^W** and **^Z** to scroll the display up and down, respectively.

In the example above, the description for the **M** shorthand character is **Memo** and its definition is **Memorandum**. When you type **Esc M**, WordStar types **Memorandum** into your text at the cursor location. The description for the **C** shorthand character is **Center** and its definition is **^OC**. When you type **Esc C**, WordStar types **^OC**, the command to center the line.

Remember, the definition must match what you would type yourself. To enter a control character, press **^P** followed by the control character. The ↵ key is entered as **^P^M**; **Esc** is **^P Esc**.

To enter a new shorthand character or to change an existing one, type the character. WordStar asks for the description. Type a new description or press **^R** to display the current description, then press ↵. WordStar asks for the definition. Type a new definition or press **^R** to display the current definition, then press ↵.

To erase a shorthand character, type the character and then press ↵ for both the menu description and definition.

When you define a shorthand character, WordStar adds it to the menu in alphabetical order. Digits come before letters.

When you are finished changing the shorthand characters, press **^U**. WordStar asks if you want to save your changes. To save the changes for this and future sessions, press **Y** for yes. If you press **N** for no, your changes will be in effect only until you exit WordStar.

> ***TIP*** *If you press **N** and later press **Y** to save additional changes, the previous changes are also saved. If you press **N** and later decide to save the changes for future work sessions, type **Esc ?** to display the definitions screen. Type any of the existing shorthand characters, and press **^R** ↵ twice to repeat the existing description and definition. Press **^U** to quit, and answer **Y** to save all the changes.*

Shorthand definitions are stored in the WSSHORT.OVR file. When you start WordStar, it looks for WSSHORT.OVR on the logged drive and directory. If the file is not there, it looks on the default drive and directory. If WordStar still can't find the file, it displays a message. In this case, you can define and use shorthand characters but you can't save them when you exit WordStar.

See also Appendix C, "Customizing WordStar."

Soft spaces and carriage returns

Soft spaces are spaces that WordStar adds to and removes from the text as needed. Spaces you enter with the **Spacebar** are hard spaces.

When WordStar justifies text, it inserts soft spaces between words to make the line extend all the way to the right margin. When you edit or align paragraphs, WordStar inserts and removes soft spaces as needed for indents and justification.

If you want to see which spaces are soft spaces, you can use the **^OB** command. When you press **^OB**, each soft space appears as a small dot. Press **^OB** again to turn off the soft-space display. You can change the soft-space display dot to a different character with WSCHANGE.

To remove all soft spaces between words from a paragraph, turn justification off and align the paragraph. To turn off the display of soft spaces, use the command **^OP**.

Carriage returns can also be hard and soft. Pressing ↵ enters a hard return. A line that wraps to the line below ends with a soft carriage return. The line may end at a different word when you align the paragraph. You can't enter soft returns but you can erase them. To change a soft return to a hard return, move the cursor to the end of the line and press ↵. A blank line is also inserted, so you need to erase it. To convert a hard return to a soft return, press **^6**. (Use the 6 key above the letter keys, not the 6 on the numeric keypad.) This command converts the hard return at the end of the line containing the cursor to a soft one.

A hard return is flagged with a < in the flag column; a soft return is flagged with a blank space.

See also **Aligning a paragraph**, **Hyphenation**, **Justification**, **Previewing**, **Word wrap**, and Appendix C, "Customizing WordStar."

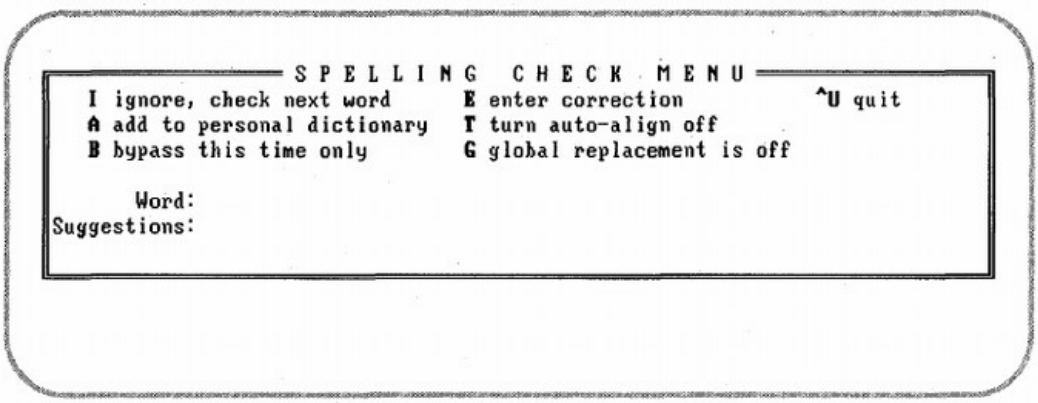
Spelling check

The commands for using the WordStar spelling corrector appear on the Quick Menu. They are described below.

Command	Function
^QL	Checks the spelling in the rest of the document, beginning at the current cursor position. To check the whole document, place the cursor at the beginning of the document before pressing **^QL**. You can use **^U** to stop the spelling check before the end of the document. **^QL** doesn't check words in dot command lines.
^QN	Checks the spelling of the word at the cursor. If the cursor is between words, **^QN** checks the spelling of the following word. Unlike **^QL**, **^QN** can also check words within dot commands.
^QO	Allows you to type a word and checks its spelling. The word does not have to be anywhere in your document.

WordStar's dictionary of 87,000 words is stored in the files MAIN.DCT and INTERNAL.DCT. The personal dictionary, PERSONAL.DCT, contains words you use that are not in WordStar's dictionary files. The personal dictionary is empty when you first use WordStar. You can add words to it using the Spelling Check Menu command **A**, which is described below.

When you enter one of the spelling check commands, WordStar checks the spelling of the words in your document against all three dictionary files. When you use **^QL**, each time WordStar encounters a word that is not in the dictionaries, it stops and displays the Spelling Check Menu, the word in question, and suggestions on how to correct it. When you use **^QN** to check just one word, WordStar always displays the Spelling Check Menu, tells you if the word is spelled correctly, and displays suggestions. A sample Spelling Check Menu is shown below.



A brief description of each command in this menu is given below.

Command	Result
I	Ignores the word and goes to the next word. With ^QL, the word is ignored throughout the file. With ^QN, the next word in the text is checked. With ^QO, you can type another word to check.
A	Adds the word to your personal dictionary. Once you add a word to your dictionary, WordStar doesn't stop at the word each time it appears.
B	Bypasses this occurrence of the word but stops at subsequent occurrences.
E	Enters a replacement word that you type. When you press E, the **Replace with** prompt appears. Type the corrected word and press ↵. The word you type is checked next.
T	Turns auto-align off and on. The default is on. When auto-align is on, WordStar automatically aligns a paragraph when it substitutes a correctly spelled word for the misspelled one. The word **Align** appears in the status line during a spelling check. When auto-align is off, paragraphs containing corrections are not aligned.

G Turns global replacement off and on. The default is off. When you turn global replacement on, it affects only the word you are currently correcting; it is automatically turned off for the next word checked. When global replacement is on, WordStar replaces all occurrences of the word in the file with the correct word you choose. When global replacement is off, WordStar replaces only this instance of the word.

The word being checked appears below these options, along with suggestions of correct spellings. If there are more suggestions than fit on the screen at once, the command **M display more suggestions** appears. Press **M** to see additional suggestions. If one of the suggestions is the one you want, type the number of that suggestion. It is automatically inserted in your text.

When you use **^QO**, WordStar asks for the word to check before displaying the Spelling Check Menu. Type the word and press ←┘. After you enter the word, a modified Spelling Check Menu is displayed. In this menu, the **I** option allows you to enter another word to check. The **R** option inserts the word in question into the text at the cursor position. The **B** and **G** options are not used with **^QO**.

Starting WordStar

Before you use WordStar for the first time, follow the installation instructions in "Starting."

To start WordStar, type **ws** and press ←┘. The first screen that appears shows the version number, serial number, copyright notice, and the names of your computer and printer. Then the Opening Menu appears.

> ***TIP*** *If you press the* ***Spacebar*** *right after you see the version number, the Opening Menu appears sooner.*

You can bypass both the copyright screen and the Opening Menu and begin editing a document immediately. To do this, type **ws** followed by the name of the file you want to edit, as shown below.

```
A>ws first.doc
```

The file is considered a document file unless you use the **N** option described below or use WSCHANGE to change this default. See Appendix C, "Customizing WordStar."

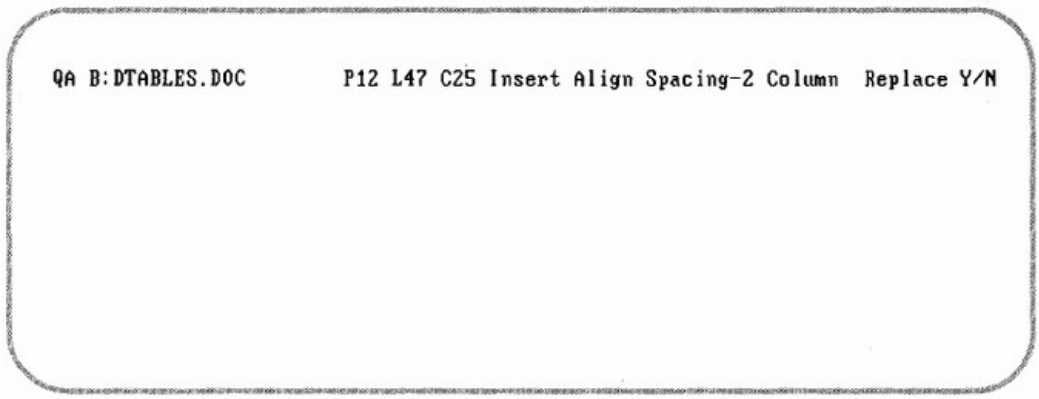
You can also add a space and the letter **D**, **N**, or **P** after the filename to automatically edit in document or nondocument mode, or to print the file instead of editing, respectively. You can add **PX** to print the named file, then exit to the operating system.

Status line

The status line is at the very top of the editing screen. It shows the cursor location, warnings, and other messages. The status line is not displayed at help level **0** or if you turn it off using WSCHANGE.

The status line cursor indicator helps you keep your place in the file. It's helpful when you use print controls in columns of text, because the print control characters displace the text, making columns appear to be misaligned. Other messages, like the filename and the words **Insert** and **Prtect**, help you keep informed about the current status of the file.

A sample status line for a document is shown below.



All the possible information that can be shown in a status line is described below.

Command When you enter a command with the **Ctrl** key, it is displayed only for as long as it takes to carry out the operation. In the example above, the **^QA** (find and replace) command is in progress.

Filename and drive This is usually displayed. In the example above, the file TABLES.DOC on drive B is being edited.

Wait This message is displayed in place of the filename during lengthy operations and when WordStar is accessing the disk. If you type quickly while this message is displayed, you may lose some of the characters you type.

Cursor indicator This shows the **P**age, **L**ine, and **C**olumn numbers of the cursor's present position. In the example above, the cursor is in column 25 of line 47 of page 12.

Insert This is shown whenever Insert is on. (The **Ins** key or **^V** turns it on and off.)

Prtect This is shown in place of **Insert** if the document you're working on is protected.

Align This is shown unless the **.AW off** dot command is in effect at the current cursor position (see **Aligning a paragraph**). During spelling checking, it is displayed unless you turn auto-align off (see **Spelling check**).

Mar-Rel This is displayed in place of **Align** when margin release is on. (**^OX** switches it on and off.)

Preview This is displayed in place of **Align** when preview is on (**^OP** switches it off and on).

Spacing If the line spacing is anything except one, this message is shown. In the example above, **Spacing–2** shows that the spacing is set to double-spaced.

Column This is displayed when you are in column mode.

ColRepl This is displayed in place of **Column** when you are in column mode and column replace is on.

Decimal This is displayed when you use the **Tab** key or **^I** to move the cursor to a decimal tab. It appears in the same position as **Column**. If you're in column mode, it replaces **Column** or **ColRepl** temporarily.

Replace? Y/N This prompt appears during find and replace operations when you need to decide whether to replace the word at the cursor. The cursor jumps continuously from the prompt to the text and back again until you respond.

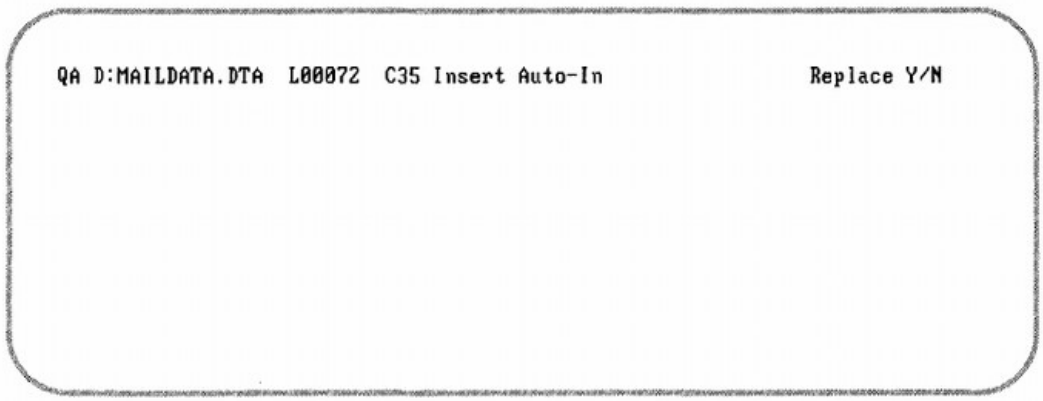
Large-File This is displayed when the document you are editing becomes so large that only 3K bytes of working memory are left, or if the document is too large to fit entirely in working memory. It appears in the same position as **Replace Y/N**.

Dot-Limit This message warns you that the number of dot commands in the document is more than the number that WordStar can keep track of during editing. It is displayed in the same position as **Replace Y/N**.

Printing This appears when you are printing in the background. It is displayed in the same position as **Replace Y/N**.

Print wait This appears when you are printing in the background and printing is paused. When you see this message, you must press **^KP** while editing or **P** or **M** at the Opening Menu, then enter the appropriate command when you are ready to resume printing. This message is displayed in the same position as **Replace Y/N**.

In nondocuments, the status line is slightly different. A sample status line for a nondocument is shown below.



The differences between a nondocument status line and a document status line are described below.

Cursor indicator Because nondocuments have no pages, the indicator shows only Line and Column numbers. The line number can go as high as 65535, and the column number as high as 999.

Auto-In This is displayed when auto indent is on (**^6** switches it on and off).

Storing a file

See **Saving a file**.

Strikeout

Occasionally you may want to overprint a series of characters with hyphens. For example, some legal documents require crossed-out sections to be printed.

To strike out text, place the cursor on the first character to be struck out and press **^PX**. The symbol **^X** appears on the screen. Any text after the **^X** is highlighted. New text you type is also highlighted. To stop strikeout, move the cursor to the end of the text to be struck out and press **^PX** again. The highlighting also stops.

To delete strikeout, place the cursor on the **^X** and press **Del** or **^G**. Be sure to remove both the beginning and ending strikeout markers.

You can use WSCHANGE to choose a different character to use for strikeout instead of the hyphen.

Subscript and superscript

Subscripted text is printed slightly below the rest of the text on the line. To subscript text, place the cursor at the beginning of the text you want subscripted and press **^PV**. The symbol **^V** appears on the screen. Any text after the **^V** is highlighted and new text you type is also highlighted. To stop subscripting, move the cursor to the end of the text you want subscripted and press **^PV** again. The highlighting also stops.

Superscripted text is printed slightly above the rest of the text on the line. To superscript text, place the cursor at the beginning of the text you want superscripted and press **^PT**. The symbol **^T** appears on the screen. Any text after the **^T** is highlighted and new text you type is also highlighted. To stop superscripting, move the cursor to the end of the text you want superscripted and press **^PT** again. The highlighting also stops.

To delete subscripting or superscripting, place the cursor on the **^V** or **^T** and press **Del** or **^G**. Be sure to remove both the beginning and end markers.

On incremental printers, WordStar produces subscripted and superscripted text by rolling the carriage so characters are printed slightly below or above the rest of the text on the line. The amount of roll is normally 3/48 inch. You can change it with the **.SR** dot command. Type **.SR** followed by the number of 48ths of an inch of roll you want. For example, to change to 4/48 inch roll, type **.SR 4**.

Some dot matrix printers have a special half-high font available specifically for subscripts and superscripts. If your printer has such a font available, set the subscript/superscript roll to zero. Otherwise, WordStar will print full size subscripts/superscripts offset up or down as described above.

On other kinds of printers, WordStar has to roll the carriage a whole line in order to print subscript and superscript.

Tab key

See **Keyboard** and **Tab stops**.

Table of contents

To create a table of contents, first use the **.TC** dot command to enter each table of contents entry in your text. Enter the command directly above the actual heading so the correct page number will be used. Type **.TC** followed by the entire text you want to appear in the table of contents, including punctuation and indentation. To indent an entry in the table of contents, just add extra blank spaces after the **.TC**. Use print control commands if you want to use features such as boldface or italics.

Use the # character in the **.TC** command to indicate the page number. When you generate the table of contents, the # is replaced with the number of the page the dot command is on. If you want the actual # symbol to appear in the table of contents, precede it with the backslash character (\) in the dot command line.

For example, if you enter this dot command on page 1:

.TC DEFINITION ..... #

and this one on page 3:

.TC Looking It Up..... #

the entries below will appear in the table of contents:

DEFINITION 1
Looking It Up 3

To produce the table of contents, press **T** at the Opening Menu. WordStar asks you to name the file. Type the filename and press ↵. WordStar asks which page to start on. The default is the first page.

Press ↵ to accept the default or type another page number and press ↵. WordStar asks which page to end on. The default is the last page. Press ↵ to accept the default or type another page number and press ↵.

WordStar reads through the document and finds all the **.TC** commands and their page numbers. It places them into a new document file on the logged drive and directory. The filename is the same as the source document, with the extension **.TOC**. You can then edit the table of contents file as needed.

A variation of the **.TC** command allows you to prepare up to 9 additional separate tables of contents from one document at the same time. The variation involves adding a digit from 1 to 9, like this:

.TC1 Figure 1 . . . . . #

When you use this variation, WordStar gathers the entries for all numbered **.TC** commands and places them into separate document files. These files all have the original document filename, but with a numbered extension: **.TO1**, **.TO2**, **.TO3**, and so on.

Tab stops

Tab stops provide a convenient way to indent text. You can set a tab stop (also called a tab) at any column number except the left and right margin columns.

Press the **Tab** key (or **^I**) to move the cursor to a tab stop. Each time you press the key, the cursor moves to the next tab to the right. When the cursor reaches the last tab stop in a line, it stops.

Regular tab stops are shown in the ruler line as exclamation points (!). They align columns of text by the first character you type after tabbing. Decimal tabs are shown as number signs (#). They align columns by the decimal point.

If Insert is on, tabbing pushes characters between the cursor position and the tab to the right. If Insert is off, tabbing moves the cursor over existing text to the tab stop.

Use the **^OI** and **^ON** commands to set and clear tabs. To set a tab stop, press **^OI**. WordStar asks you where you want the tab stop. Press **Esc** to set the tab in the current cursor column, or type the column number and

press ↵. To set a decimal tab, precede the column number with the # character. To clear a tab stop, press ^**ON**. WordStar asks you which tab you want to clear. Press **Esc** to clear the tab in the current cursor column, or type the column number of the tab and press ↵.

After you set or clear tabs with ^**OI** or ^**ON**, you can use the ^**OO** command to create an embedded ruler line containing the current tabs. If you don't put the tabs in an embedded ruler line, they will not be in effect in future editing sessions, and aligning paragraphs could change your indents.

You can also change tabs and create an embedded ruler line at the same time by typing an **.RR** ruler line.

For nondocuments, tab stops are at fixed intervals, usually every 8 columns. You can change this tab stop interval. Press ^**O**. WordStar asks you for the new interval. The interval must be a binary multiple (1, 2, 4, 8, and so on). Type the new interval and press ↵. The new interval is in effect only as long as you are editing; it is not saved with the file. You can also use WSCHANGE to automatically set the interval based on a nondocument's filename extension.

In a nondocument, when you press **Tab** or ^**I**, besides moving the cursor, WordStar also puts a special tab character into the text. You can also insert the special tab character in a document file by pressing ^**PI**. This character is very rarely used in documents.

You can also use regular tab stops in a nondocument. Use WSCHANGE to enter them.

See also **Columns**, **Indenting text**, **Ruler lines**, and Appendix C, "Customizing WordStar."

Temporary files

WordStar creates and uses up to three temporary files while you are editing a document. These files have the same filename as the document with the extensions .A, .B, and .C. For example, if you are editing a document named LETTER.DOC, the temporary files are named LETTER.A, LETTER.B, and LETTER.C. WordStar uses the first two temporary files to keep track of documents that are larger than the available memory on your computer. The third temporary file is created only during a block move or copy operation.

Every time you open a file, WordStar creates the first two temporary files. When a document fills the allotted memory, WordStar takes a block of text from the beginning of the document and writes it to the .B file. This frees up space in memory for new text. As you type more, WordStar puts more text from the beginning of the document into the .B file.

If you go back to the beginning of the document during editing, text from the end of the document in working memory is written to the .A file, and a portion of the .B file is read back into memory. As you move back and forth through the document, WordStar apportions text among the temporary files and memory.

When you save the file, WordStar puts the contents of memory and the .A file into the .B file, which now contains the entire edited document. WordStar changes the name of the original file by changing (or adding) the extension to .BAK. The .B file is then renamed with the filename you specified when you opened the document. (If the document is new, no .BAK file is created.)

WordStar warns you if there is not enough room on the disk for the original document, the backup file, and the temporary files.

See also **File operations** and **Memory usage**.

Temporary indenting

See **Indenting**.

Toggles

Many commands turn functions both on and off, like a toggle switch on a machine. If a toggle function is on when you enter its command, the command turns it off. If the function is off, the command turns it on.

In the menu descriptions of the toggle commands, the words on and off indicate what will happen when you enter the command. This description changes when you use the command.

Underlining

To underline text, place the cursor where you want the underlining to start and press ^**PS**. The symbol ^**S** appears on your screen. Any text after the ^**S** is highlighted and new text you type is also highlighted. To stop underlining, move the cursor to where you want underlining to end and press ^**PS** again. The highlighting also stops.

To delete underlining, place the cursor on the ^**S** and press **Del** or ^**G**. Be sure to remove both the beginning and end underline markers.

Usually, spaces between underlined words are not underlined when you print. To underline spaces as well as words, use the **.UL on** dot command. To stop underlining spaces, use **.UL off**.

Undo and unerase

You can undo many commands with ^**U**. The list below shows some of the ways you can use undo.

- Cancel a response to a prompt before the response is final.
- Stop ^**QR** and ^**QC** from going all the way to the top or bottom of your file.
- Stop a find or find and replace operation.
- Stop a spelling check.
- Stop hyphen help from showing you more hyphenation spots in a paragraph.
- Stop printing.
- Restore text you accidentally erase.

Undoing an erasure is called unerasing. It restores the last characters you erased. When you press ^**U**, the last group of characters you erased is restored to the screen. WordStar inserts them wherever the cursor is, not at the place they were removed from (unless the cursor is still there). Single characters erased with ^**G**, ^**H**, **Backspace**, or **Del** cannot normally be unerased. You can change this with WSCHANGE.

TIP *Unerasing is an easy way to move a short phrase. Erase the text, move the cursor, and press* ***^U****. But you have to erase the text with only one command, such as* ***^QY****, not several, such as four* ***^Ts*** *in a row.*

Unerasing works because WordStar stores your last erasure in a special buffer it creates in working memory. Only the last erasure is stored. Each time you erase something, WordStar empties the buffer of what was previously erased, and puts the current erasure in its place.

Pressing **^U** copies the contents of the buffer into the text. It does not empty the buffer. You can unerase the same characters repeatedly. This can be handy for duplicating words and phrases.

Normally, WordStar unerases a maximum of 500 characters, but you can change that value with WSCHANGE. Keep in mind that the buffer is in working memory. Therefore, the larger the buffer, the less memory is available for your files. One character equals one byte, so the default value of 500 characters takes up 500 bytes of working memory.

If you try to erase text that is too long to fit in the unerase buffer, WordStar displays a warning message and allows you to cancel the command.

See also Appendix C, "Customizing WordStar."

Variables

See **Merge printing**.

Word count

While you are editing, you can press **^Q?** to display the number of characters from the beginning of the file to the current cursor position.

You can also get a complete count of the lines, words, and characters in a file using a separate word counting utility program that is included with WordStar. You can run the word counter either from DOS or from WordStar using **run a DOS command** (**R** at the Opening Menu or **^KF** while editing).

The word counter can give counts for one or more files at a time. All the files must be in the logged drive and directory. To run the word counter, type

WC filename1 filename2 . . . ↵

The word counter displays the number of lines, words, and characters in each file. If you type more than one filename, it also displays the totals for all the files. This can be useful if you are storing a document in several files; the counter can tell you the overall length. For example, if you have a three-chapter book, you could type

WC chapter1.doc chapter2.doc chapter3.doc

The word counter would display

lines	words	characters	
1221	5539	48410	chapter1.doc
599	3070	24246	chapter2.doc
1173	5014	41503	chapter3.doc
2993	13623	114159	total

If you type **WC** and press ↵ without typing any filenames, the word counter counts the words you type on your screen until you press **^Z**.

Word wrap

WordStar keeps track of the number of characters and spaces on each line. If you type beyond the right margin, words automatically "wrap" to the next line. The cursor appears at the end of the wrapped word so you can continue typing. Word wrap allows you to type an entire paragraph at high speed without having to press ↵ for each carriage return.

When you start WordStar, word wrap is normally on. You can change this default with WSCHANGE. See Appendix C, "Customizing WordStar."

Sometimes you may want to turn off word wrap. For example, tables with columns of information can be much easier to type with word wrap off. When word wrap is off, you can continue typing beyond the right margin (up to column 255). You must press ↵ at the end of each line you type.

To turn off word wrap while editing, press **^OW**. To turn word wrap back on, press **^OW** again. When **^OW** is in effect, WordStar beeps to tell you when your text goes past the right margin.

You can also turn off word wrap with the dot command **.AW off**, and back on with **.AW on**. These commands allow you to turn off word wrap permanently for a section of a file. It also turns off aligning and justification. For example, you can use **.AW off** before a table and **.AW on** after it. Whenever you subsequently edit the file, the table is protected from word wrap, alignment, and justification.

See also **Aligning a paragraph**, **Justification**, and **Soft spaces and carriage returns**.

?	The dot command on this line is not recognized by WordStar.
1	The dot command on this line changes the onscreen format and the printout; it works best if it's placed at the beginning of a page.
–	This line ends with a carriage return but without a line feed, as specified by **^P** ↵; it will be overprinted by the next line.
J	The line ends with a line feed character produced by **^PJ** instead of a carriage return.
B	The beginning block marker is in this line.
K	The end block marker is in this line.

Footers and headers

A footer is special text that prints at the bottom of every page. A header is special text that prints at the top of every page. You can use footers and headers to print information such as document title, page number, and date.

You can define up to three lines for a footer and up to three lines for a header. If you don't define a footer in your file, WordStar prints a one-line footer that contains only the page number, in column 28. (You can turn off this footer using **.OP**, omit page number, or change the column using **.PC**. See **Page numbers**.)

To define footers and headers, use these commands, followed by the text you want to use.

Command	Purpose
.FO or **.F1**	First footer line (that's the letter o, not zero)
.F2	Second footer line
.F3	Third footer line
.HE or **.H1**	First header line
.H2	Second header line
.H3	Third header line

To turn a footer or header off, type the same dot command that began it (without any text), then press ↵. If you turn off all footers, the default page number footer is restored.

To include the page number in a footer or header, use the # character. For example, **.FO Page #** prints as **Page 1** on the first page. To print the # character itself rather than the page number, precede it with a backslash. For example, **.HE Draft \#2** prints as **Draft #2**. To print a backslash, use two backslashes (\\).

You can use print controls such as **^PB** (boldface) and **^PS** (underlining) in footers and headers. These print features will print; however, footer or header text marked with such print controls is not highlighted on the screen. Print controls in footers and headers do not affect the rest of the document. Footers and headers are not affected by changes to print controls in the rest of the document.

To produce alternating left and right footers and headers, use the **^PK** command on the footer or header line. Press **^PK** and then use the **Spacebar** to space over to where you want the text to start on right-hand (odd-numbered) pages. Then type the footer text. The footer will contain the spaces before the text on odd-numbered pages but will start in column 1 on even-numbered pages.

To put a blank line between two footer or header lines, type **.F1** (or **.H1**) and the text for the first line. For the blank line, type **.F2** (or **.H2**), press the **Spacebar** twice, and press ←┘. For the third line, type **.F3** (or **.H3**) and the text for the last line.

On the printed page, the footer or header text begins at the column position equivalent to the number of spaces between the command itself and the text. If you type no spaces (**.FOtext**) or one space (**.FO text**) the footer or header text will begin at column 1. If you type two spaces, the text will begin at column 2, and so on.

A footer or header is printed throughout the document with the line height and character width in effect in the document at the place you entered the **.FO**, **.F1**, **.HE**, or **.H1** dot command, even if you change these settings later in the document. (Second and third header or footer lines always have the same line height and character width as the first lines.)

The footer and header are printed within the top and bottom margins of the document; they are not considered lines of text. See **Margins** and **Page length**.

> ***CAUTION*** *The default top margin of 3 and header margin of 2 allow you only 1 line for header text. If you want a header with 2 or 3 lines, use the* ***.HM 0*** *dot command (or* ***.MT 5*** *or greater). Otherwise the pages will print incorrectly.*

Appendix A

Error Messages

WordStar error messages are listed below in alphabetical order. Each error message is followed by a brief description of the problem and its solution.

x is not a valid option.

Problem: You typed a wrong character when asked for options in a **^QF** find or **^QA** find and replace operation. Valid options for both **^QA** and **^QF** are B, G, U, W, and ?. N, R, and A are valid options for **^QA** only.

Solution: Reenter your options using only valid characters.

Background printing is off.

Problem: You tried to use **^KP** to print a file while you are editing, but background printing is turned off in WSCHANGE or you have insufficient memory.

Solution: Wait until you are done editing the file you're in, then print the other file from the Opening Menu.

Cannot find (filename).

Problem: WordStar can't find its files.

Solution: If you have a two floppy disk computer, make sure you have the correct disk in the drive and that you have told WordStar the correct location for its files. If you have a hard disk computer, make sure the files are in the \WS4 directory. If they are in a different directory, use WSCHANGE to tell WordStar the new path to these files.

Cannot make an index or tables of contents while printing.

Problem: You pressed **I** or **T** at the Opening Menu while you were printing a file.

Solution: Wait until you are done printing, then create the index or table of contents.

Cannot move to a marker that has not yet been defined.

Problem: You tried to move to a marker that isn't set.

Solution: Use **^K0-9** to set the marker.

Cannot rename document being edited.

Problem: You tried to rename your current document.

Solution: Wait until you are done editing this file and rename it at the Opening Menu.

Cannot save file until printing is finished.

Problem: The file you are trying to save is being printed in the background.

Solution: Wait until the file is done printing, then save it.

Can't check spelling. Possible reasons:
1. Spelling is turned off in WSCHANGE
2. Not enough memory
3. Can't find WSSPELL.OVR

Problem: WordStar can't check spelling for one of the reasons listed.

Solution: Make sure WSSPELL.OVR is present, or check that spelling is turned on in WSCHANGE. If both of these are correct, you may not have enough memory to run a spelling check.

Can't continue—disk full or disk error. If full, use ^KJ to erase files to make room.

Problem: Either your disk is full, or there is a disk error and WordStar is unable to write to the disk.

Solution: Delete unnecessary files with **^KJ**. You may want to copy one or more files to another disk with **^KO** before deleting them to make more room.

Can't create a file. The disk may be full, or there was a disk write error, or CONFIG.SYS on your boot (system) disk lacks the line FILES=20.

Problem: WordStar can't put a new file on the disk you specified. The disk or directory is either full or write protected, there was a disk write error, or the line FILES=20 isn't in your CONFIG.SYS file.

Solution: If necessary, delete files to make room. Be sure that the CONFIG.SYS file on the boot disk contains the statement FILES=20.

Can't create output file.

Problem: WordStar can't create the print-to-disk file. Your disk may be full or your CONFIG.SYS file may not have a FILES=20 statement.

Solution: Make sure there is enough room on your disk. If there is enough room, check your CONFIG.SYS file. If you add a FILES=20 statement, remember to reboot your computer afterward.

Can't create temporary work files. Your work disk may be full or protected. Be sure that the file CONFIG.SYS on your boot disk contains the line FILES=20.

Problem: WordStar creates temporary files in order to edit a document. If the disk or directory is full or write protected, WordStar can't create any new files. This message may also appear if the FILES=20 statement is not in the CONFIG.SYS file on your DOS boot disk.

Solution: If the disk is full, clear space by deleting or moving files. Don't edit files on a write protected disk. Use WINSTALL or WSCHANGE to check CONFIG.SYS and add the required statement.

Can't delete that file. It may be misspelled or on a different drive or directory.

Problem: The file you asked WordStar to delete is not on the logged drive or directory.

Solution: Type the filename correctly. Include a drive letter or directory path if the file is not on the logged drive or directory.

Can't delete that file. Operating system error.

Problem: An operating system error occurred when you were trying to delete a file.

Solution: Exit WordStar and try to delete the file using DOS.

Can't delete the file being edited.

Problem: You can't delete the file you are currently editing.

Solution: Before you delete the file, you must end the edit session with **^KQ**, **^KD**, or **^KX**.

Can't do block operations on a hidden block. Press ^KH and try again.

Problem: You are attempting to perform a block operation (copy, move, delete, or write to disk) when the markers are hidden.

Solution: Before performing the block operation, press **^KH** to turn on the block marker display.

Can't do that equation. Check it for correctness.

Problem: Something in your ^**QM** or **.MA** equation produces an illegal result; for example, division by zero, the square root of a negative number, or use of a nonnumeric variable.

Solution: Correct the equation.

Can't edit temporary files (files with $ in name extension).

Problem: To prevent problems, you cannot edit the temporary files that WordStar uses while editing. These files have extensions of .A, .B, or .C.

Solution: If you want to edit the file and are sure that you won't create problems, you can rename the file or copy it to a new file, then edit it.

Can't execute command. Your computer may not have enough memory.

Problem: The operating system is unable to run your DOS command, probably because of insufficient memory. Remember, WordStar stays resident in memory while your command is running, so there must be enough memory for both WordStar and the command.

Solution: Exit WordStar before running the command.

Can't find COMMAND.COM. Be sure your boot (system) disk is in the drive.

Problem: WordStar can't find the COMMAND.COM operating system program to run your DOS command. WordStar looks on the drive where you first booted your system and on the default drive, which is the first one in the legal drive list.

Solution: With a two floppy disk system, you may need to insert your boot disk to run a DOS command. With a hard disk system, be sure that COMMAND.COM is in a directory that is searched. You can change the default drive with WSCHANGE.

Can't find that directory path. It may be misspelled, incomplete, or doesn't exist.

Problem: The path you entered either does not exist on the specified drive or isn't complete enough for DOS to find it from the current directory.

Solution: Enter the correct path.

Can't find that file. Create a new one (Y/N)?

Problem: This is not an error. WordStar is just letting you know that you typed a new filename.

Solution: If you want to create a new file, press **Y**. If you want to edit an existing file, press **N**, then type the correct filename. If the file is on a different drive or directory, be sure to type the correct path before the filename.

Can't find that file. It may be misspelled or on a different disk or directory.

Problem: The file you named is not on the logged drive or directory.

Solution: Type the filename correctly. Include a drive letter or directory path if the file is not on the logged drive or directory.

Can't find that file. Press C to continue anyway or ^U to stop.

Problem: When printing or merge printing, WordStar couldn't find the file referred to with **.FI**, **.DF**, or another dot command.

Solution: Be sure you typed the filename correctly in the dot command and that you included a drive letter, directory path, or **change** command if the file is not on the logged drive, directory, or disk. If you want to continue printing without using the file, press **C**. Otherwise, press **^U** to quit printing, then correct the error.

Can't perform a sum. Block doesn't contain numbers.

Problem: You pressed **^KM** to sum all the numbers in a marked block, but WordStar is unable to find any numbers there.

Solution: Before you use **^KM**, be sure to mark the block correctly.

Can't print unless WSPRINT.OVR is on the disk.

Problem: WordStar's printer drivers are contained in the WSPRINT.OVR file. This file must be present on your disk for WordStar to print.

Solution: Make sure WSPRINT.OVR is on the correct disk or in the correct directory, then start WordStar again.

Can't rename that file. The name you chose is already in use.

Problem: The operating system won't let WordStar rename the file. The name you chose is probably already being used by a hidden file, a directory, or another system file.

Solution: Choose a different filename.

Can't replace due to insufficient disk space.

Problem: WordStar has run out of disk space while performing a **^QA** find and replace.

Solution: Use **^KJ** to delete files as needed to make space. Then use **^L** to continue the find and replace.

Can't set the left margin at or to the right of the right margin.

Problem: You entered a left margin column number that is larger than the right margin column number.

Solution: If you entered the number you really want, change the other margin first.

Can't store changes. Your disk may lack the file WSSHORT.OVR.

Problem: WordStar is unable to save your shorthand changes. You may have removed the disk that contains WSSHORT.OVR. You can still use the changes you've made, but they won't be saved when you exit WordStar.

Solution: Make sure WSSHORT.OVR is on the disk, then start WordStar again.

Can't store results. Disk probably full or filetype conflict.

Problem: WordStar can't create the index (.IDX) or table of contents (.TOC) file because your disk is full.

Solution: Create room on your disk by moving or deleting files.

Can't update dictionary. Disk or dictionary may be full, protected, not in the drive, or does not exist.

Problem: WordStar was unable to add a word to the personal dictionary (PERSONAL.DCT). You probably have reached the maximum number of words in the personal dictionary. Otherwise, the disk that contains PERSONAL.DCT may be full, protected, or not in the drive.

Solution: Be sure the correct disk is in the drive. If necessary, delete files to make room. Don't keep PERSONAL.DCT on a disk that is protected. If PERSONAL.DCT has the maximum number of words, you can edit it in nondocument mode to delete words you no longer want. Or you can rename it, then create a new file named PERSONAL.DCT to store additional words.

Can't use that printer. Incorrect name or not enough memory.

Problem: As WordStar begins printing, it loads either the installed printer driver or the one you named at the **"Name of printer?"** prompt. Either the driver is not in WSPRINT.OVR, or there is not enough memory available to hold it.

Solution: Make sure you specify a valid driver name. For a memory problem, you can check WordStar memory usage by pressing **?** at the Opening Menu. If you are running a memory-resident program along with WordStar, exit WordStar, then the other program.

Change disk. Press C when ready to continue.

Problem: The file you are printing contains a command to insert a file from another disk.

Solution: Put in the correct disk for the inserted file.

Could not find that tab.

Problem: You tried to delete a tab that has not been set.

Solution: Type the column for an existing tab. To delete a decimal tab, remember to type # before the column number.

Dictionary incompatible with this version of WordStar.

Problem: The main or internal dictionary on your disk does not work with this version of the spelling checker, or you are using a different main or internal dictionary than you used earlier in this editing session, or your main and internal dictionaries are not from the same dictionary set.

Solution: Copy the correct version of the dictionaries from your original disks. If you have more than one release of WordStar on your disk, see "Changing the Installed Path" in Appendix C.

Use one dictionary set, such as standard, legal, or medical, per editing session. To change dictionaries, exit WordStar, change dictionaries, then restart WordStar. Make sure your main and internal dictionaries are both from the same set.

Equation is too complex. Break it up into smaller ones.

Problem: Your math equation is too complicated for WordStar to handle.

Solution: Reword the equation in several smaller equations.

File is being used for printing.

Problem: You tried to edit a file that is currently being used to print to disk.

Solution: Wait until WordStar is finished printing to this disk file before you edit it.

File won't rename.

Problem: You specified a path or drive letter for the new file that is different from the original file.

Solution: Rename the file without specifying a directory or drive, or press **O** to copy the file to a new drive or directory.

Global replacement word list is full.

Problem: The global replacement word list buffer is full.

Solution: To clear the buffer, stop the spelling check, then relog onto the drive or directory with **^KL** or leave this document.

Help messages not available. Use WSCHANGE to make them not entirely memory resident.

Problem: WordStar's help messages are not in memory, and the WSMSGS.OVR file has already been closed, so it cannot display help.

Solution: Use WSCHANGE to change WordStar so that it doesn't make itself completely memory resident.

Ignore word list is full.

Problem: The ignore word list buffer is full. Since this buffer shares memory space with your personal dictionary, the problem may be that your personal dictionary is very large.

Solution: To clear the buffer, stop the spelling check, then relog onto the drive or directory with **^KL**. If your personal dictionary is very large (the limit is approximately 1500 words), you may want to create more than one personal dictionary. If you create extra personal dictionaries, use WSCHANGE to have WordStar ask you which dictionary to use.

In a column block, the <K> marker (column end) must be below and to the right of the <B> (column beginning).

Problem: You gave a block command in column mode, but the markers do not mark a valid column.

Solution: Set the beginning marker at the upper left corner, and the end marker at the lower right corner.

Insufficient memory for print while editing.

Problem: Your computer doesn't have enough memory available to do concurrent printing.

Solution: Wait until you are done editing, then print the file from the Opening Menu.

Merge print information is missing. Press C or ^U.

Problem: When you are merge printing, necessary dot command information, such as a variable name, does not exist or is invalid.

Solution: Press **^U** to stop printing, then correct the error; or press **C** to continue printing despite the error.

Mismatched parentheses.

Problem: The number of left parentheses does not match the number of right parentheses in an equation.

Solution: Check your equation and correct it.

Modifications have just been made. Are you sure you want to abandon them (Y/N)?

Problem: You pressed **^KQ** to exit the file without saving changes.

Solution: If you want to abandon the changes, press **Y**. If you don't want to abandon the changes, press **N**, and press **^KD** to exit the file and save the changes.

No disk in the drive or drive letter not a legal one. Use WSCHANGE to change legal drive letters.

Problem: Either no disk is in the drive you named or the drive letter is not in WordStar's legal drive list.

Solution: Insert a disk if necessary. If you typed an incorrect letter, type a valid one. If you typed a correct drive letter and a disk is in the drive, you can make the drive valid with WSCHANGE.

Not enough memory for nested file insertion (.FI).

Problem: You do not have enough memory available for the **.FI** insertions in your file.

Solution: WordStar's size can be reduced a little with WSCHANGE. If you are running a memory-resident program along with WordStar, you may need to remove the other program from memory. You can also restructure your document to use fewer nested **.FI** commands.

Not enough memory to continue.

Problem: Your computer has just enough memory available to start WordStar, but not enough to create necessary buffers and to load printer information.

Solution: Press **X** to exit WordStar. If you have other programs running in the background that use your computer's memory, exit some of these programs before you start WordStar again.

Not enough space to store that definition. Use WSCHANGE to increase space.

Problem: Your shorthand definition is too big to fit in the remaining shorthand space.

Solution: Either delete some shorthand definitions, make some definitions smaller, or use WSCHANGE to increase the total amount of space available.

Only help levels 3, 2, 1, or 0 are valid.

Problem: You entered an invalid help level.

Solution: Press 0, 1, 2, or 3 to choose a new help level.

Only numbers from 2 through 254 are valid.

Problem: You tried to set a tab at an invalid column number.

Solution: Type a number from 2 through 254.

Printer may not be ready. Press C to continue.

Problem: WordStar is unable to send your text to the printer.

Solution: Check to see if the printer is off line, out of paper, or at the end of its ribbon. If there is no problem, or if you have fixed the problem, press **C**. If you get this message frequently for no apparent reason, increase the value of the print timeout delay (PRNDLY) with WSCHANGE.

Program too big to fit in memory.

Problem: Your system does not have a large enough work area to run WordStar.

Solution: WordStar's size can be reduced a little with WSCHANGE. If you are running a memory-resident program along with WordStar, you may need to exit the other program.

Someone else may be using that file. Try again later.

Problem: On a LAN system, WordStar cannot save the file because someone else is either printing the same file or using it with some other program.

Solution: Try again in a few minutes.

Spacing can only be from 1 through 9.

Problem: You typed an invalid spacing number.

Solution: Type a number from 1 through 9. (Type 1 for single-spacing, 2 for double-spacing, etc.)

Spell checking temporarily disabled. Cannot change diskettes while background printing is in progress.

Problem: You tried to check spelling while background printing is in progress on a two floppy disk computer. The spelling check requires you to take out your Program disk and insert your Dictionary disk. Because you are printing in the background, you cannot remove your Program disk.

Solution: Wait until printing is done before checking spelling.

That document is protected.

Problem: That document has protection turned on.

Solution: Either turn protection off for that file at the Opening Menu, or work with a copy of the file.

That drive letter isn't on the legal drive list.

Problem: WordStar recognizes only those drive letters that are in your legal drive list.

Solution: Type a legal drive letter. If you want to use the drive, use WINSTALL or WSCHANGE to add it to the legal drive list. When typing a filename, be sure to follow the drive letter with a colon.

That file already exists. Overwrite (Y/N)?

Problem: The file you have specified already exists.

Solution: Press **Y** for yes if you want WordStar to erase the existing file's contents and replace it with the new contents. Otherwise, press **N** for no and specify another filename.

That file is already being edited. Temporary files with the same name exist. Try editing a file with a different name.

Problem: The logged drive or directory contains one or more files with the same filename as the file you named to edit and with the filename extension .A, .B, or .C. This condition occurs primarily on LAN systems. Another user may be working with the file you want to edit, or another user may be editing another file with the same filename but a different extension (the temporary files for these two files would have identical filenames).

Solution: The file being edited must be closed before you can open it. If the problem is caused by files that have the same filename but different extensions, change a filename or move a file to a different directory to avoid encountering this problem again.

That filename contains invalid characters.

Problem: The filename you typed does not conform to WordStar's rules for naming files.

Solution: Type a valid filename.

That line is too short to use as a ruler.

Problem: You pressed ^**OF** on a line containing too few characters. A line must contain at least two characters for ^**OF** to work. WordStar uses the default ruler line instead.

Solution: If you want to use the line as a ruler line, type more information on it, then press ^**OF** again.

The block is too large to unerase later. Erase anyway (Y/N)?

Problem: The block you are trying to erase is larger than the unerase buffer.

Solution: Erase the block only if you are sure you won't want to unerase it. You can change the unerase buffer size with WSCHANGE.

The end of the block is at or before the start of the block.

Problem: You tried to use a block command but the block markers are not in the correct order.

Solution: The beginning block marker must be before the end block marker in your text. In column block mode, the beginning block marker must be to the left of the end block marker.

The entire disk drive is protected and cannot be changed.

Problem: The disk you are trying to use is write-protected.

Solution: Either remove the write-protect tab or copy the file to a disk that is not write-protected.

The file to insert is NOT a column document (line lengths vary). You can...
- Press N to insert the entire file.
- Press Y to insert the file up to the point where it ceases to be a column document, and highlight the insertion (for easy deletion).
- Press ^U to insert the file up to the point where it ceases to be a column document.
Press N or Y or ^U.

Problem: The file you are reading into your current file with **^KR** has lines of varying lengths. In column mode, WordStar expects the file to be a column, that is, to have all lines the same length.

Solution: Choose one of the options listed. If you don't want to insert the file in column mode, press **Y** to highlight the inserted block. You can then press **^KY** to delete the highlighted block.

The logged drive is protected.

Problem: The disk may be physically protected with a write protect tab, or the operating system may have temporarily protected the disk.

Solution: If you want to change anything on the disk, remove the protection.

Too large to unerase. Delete anyway (Y/N)?

Problem: The text you are trying to erase won't fit in the unerase buffer.

Solution: Erase the text only if you are sure you won't want to unerase it. You can use WSCHANGE to change the size of the unerase buffer.

Too many different and/or long merge print variables.

Problem: You defined more merge print variables than WordStar can keep track of in memory.

Solution: Reduce the number of different variables you use. Use the same variable names for different functions. Use shorter variable names. Use **.SV** to make variables hold nothing while they aren't being used.

Type a number from 1 to 255, or press Esc.

Problem: You typed an invalid column number.

Solution: Type a number from 1 through 255.

WordStar cannot find that document.

Problem: WordStar can't find the file you named. The file may not be in the drive or directory you specified or you may have misspelled the filename.

Solution: Make sure you have specified the correct path to the file and spelled the filename correctly.

WordStar cannot recognize that document name.

Problem: You have typed illegal characters in the filename.

Solution: Retype the filename correctly.

WordStar isn't installed to use the special printer driver required. Use WSCHANGE to make the printer driver NOT memory resident.

Problem: You have selected a function that uses a special driver, such as indexing or tables of contents, but the driver cannot be loaded into memory because you have installed WordStar to use only the default printer driver. The default driver is memory resident, and the WSPRINT.OVR file has already been closed.

Solution: Use WSCHANGE to change WordStar so that the printer driver is loaded from the WSPRINT.OVR file instead.

Wrong (filename).

Problem: WordStar found a version of this file from a previous release of WordStar.

Solution: If you have more than one release of WordStar on your disk, see "Changing the Installed Path" in Appendix C. If you're not using the previous release, erase the old program files. See the "Starting" section of the manual for a list of files to erase.

You are printing the file you have been editing, but modifications have been made since you last saved it. Print it anyway (Y/N)?

Problem: When you background-print the file you are currently editing, WordStar prints the version of the file that was last saved (filename.BAK). You have made changes to this file that have not been saved.

Solution: Press **Y** to print the previous version of the file. If you want to print your latest version, press N, then press **^KS** to save the changes. Then print the file.

You can look at the file (but not change it), or you can return to the Opening Menu. (You can only look at the first part of very large files.) Look at the protected file (Y/N)?

Problem: Someone else is already editing the file (on a multi-user system), or the temporary files for this file already exist. (These may be left over from a previous editing session that was aborted by a system failure.)

Solution: Press **Y** to view the protected file. If you want to edit the file, wait until the other person is done. If no one else is editing the file, check for the temporary files (files with the same filename as this file and the extensions .A, .B, or C) and erase them.

You have not yet defined a block. Use ^KB and ^KK.

Problem: You gave a block command but there is no block marked.

Solution: Define both the beginning and end of the block before you copy it, delete it, move it, or write it to disk.

You've exceeded the maximum number of tabs. Clear a tab first.

Problem: You exceeded the number of tabs that WordStar can keep track of.

Solution: Clear a tab before you set another one.

Appendix B

WordStar Examples and Tips

This appendix consists of examples of various WordStar features. The examples are intended to give you ideas for using WordStar in your own work or to help you with a particular application. Because WordStar users often have questions about merge printing, many of these examples are related to merge printing applications.

Examples are given for the following:

- Changing Page Length and Line Height
- Printing Page Numbers Selectively
- WordStar's Default Page Format Settings
- Printing the First Page of a Document on Letterhead
- Printing a Standard Business Envelope
- A Typical Master Document for Merge Printing
- Merge Printing Envelopes for a Mass Mailing
- Merge Printing Three-Across Mailing Labels
- Merging and Centering a Name and Address in a Proposal

- Math, Formatting, and Conditional Dot Commands in a Master Document
- Advanced Math and Formatting Functions for Merge Printing
- Merge Printing Tips

Changing Page Length and Line Height

Suppose you're printing a booklet for vision-impaired readers. You plan to use doublewide pica type on paper that's 14 inches long. You also want to increase the line height in order to increase the spacing between lines.

Unless you use dot commands to change these settings, WordStar assumes that you print your documents on standard 8½-by-11-inch paper with 6 lines of text per inch. This example shows you how to set up a document for paper 14 inches long, with 4 lines of text per inch.

First, determine the new page length. You figure this by calculating the number of standard, single-spaced lines that can fit on the page. The standard line height is 6 lines per inch (**.LH 8**). So, for a 14-inch page, page length is 6 times 14, or 84. Indicate the new page length at the beginning of the document with the **.PL** command:

.PL 84

Next, figure the new line height. WordStar figures line height in 48ths of an inch. The standard line height is 8/48 inch, resulting in 6 lines of text per inch (**.LH 8**). You want each line to be 1½ times the standard height, or 12/48 inch high (that is, 8 times 1½). This will result in 4 lines of text being printed per inch. You'll indicate the new line height with the **.LH** command:

.LH 12

To figure out how many lines will actually be printed on a page with the new page length and line height, use the following formula:

Subtract the top and bottom margins from the page length:
84–3–8 = 73. Multiply by the standard line height: 73 x 8 = 584.
Divide by the new line height: 584 / 12 = 48.67 or 49.

There will be 49 lines of text on the page. (Note that this is not the figure for the **.PL** command. The page length merely indicates the number of standard lines that fit on this size paper.)

Top and bottom margins are always based on a line height of 8.

If you are using doublewide pica type (**.CW 24**), you should change the right margin to 33 to fit on paper 8½ inches wide.

Printing Page Numbers Selectively

When you're writing a book or report, you might want to omit page numbers on the title page and table of contents. And you probably want to begin your text with page number 1 (even though this is actually page 3 of the document). The following example shows you how to do this.

```
.OP

                    Letters of Warren Sunkel

                  Collected and Published by
           The Staff of the Truth & Trivia Collective
.PA
----------------------    (Page break)    ----------------------

                                  Table of Contents

                  Introduction                        1
      I.          The Early Years                     23
 .PA
----------------------    (Page break)    ----------------------
.H1^K                                 ^BTruth & Trivia Collective^B
.PN 1
.FO^K                                                 ^Y^B#^Y^B

                               [Text]


.PA
----------------------    (Page break)    ----------------------
.H2  (Note: A blank header must contain two spaces)
.H3^K                                 ^BLetters of Warren Sunkel^B
.HM 4
.MT 7
```

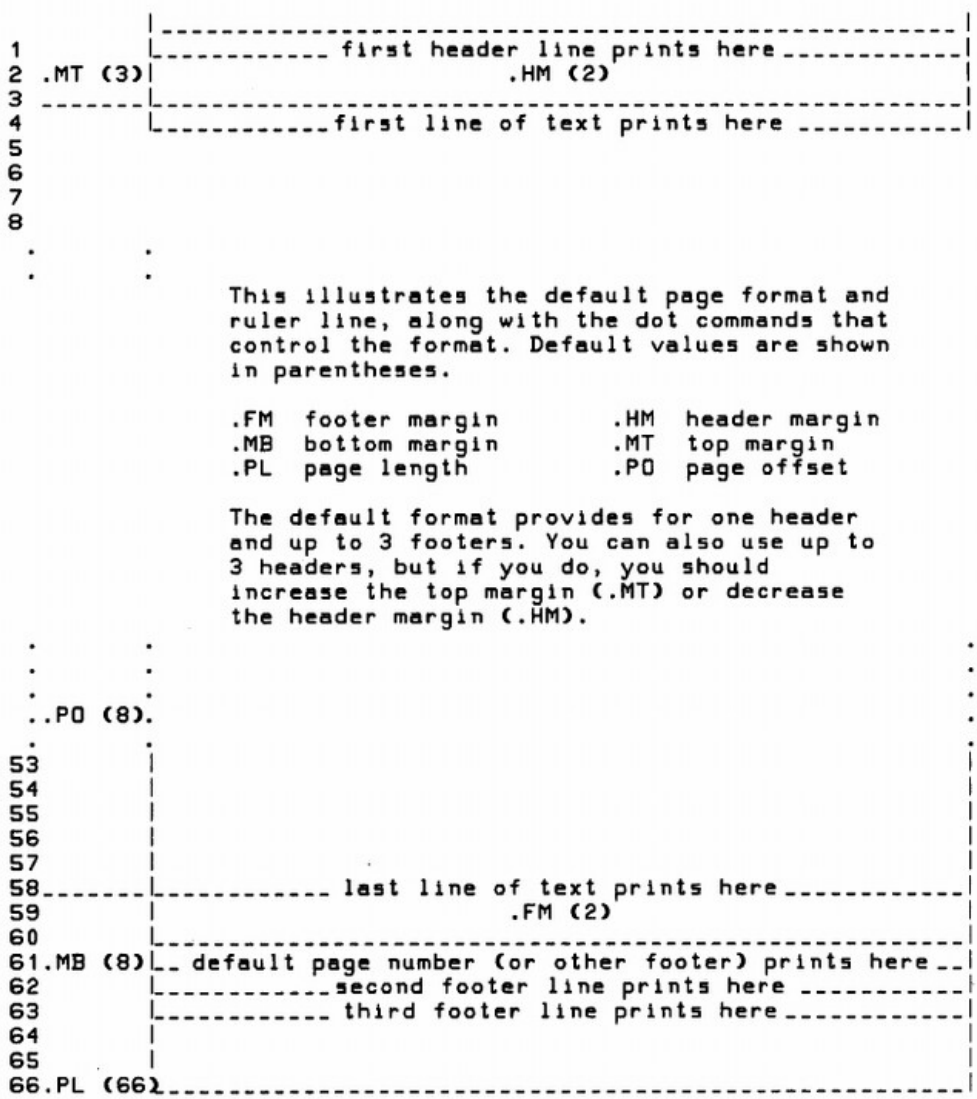
For the sample book above, neither the title page nor the table of contents page has page numbers, headers, or footers. The **.OP** command causes WordStar to omit the page numbers. The **.PA** command is used to end the pages. Page numbers will be printed in the footer, at **#**, and the**^PK** command (shown onscreen as **^K**) is used in the footer to move the page number from one side to the other on alternating pages. The **.PN** command is used here only to change the page number to 1 (since page numbers are printed in the footer, they don't need to be turned on).

On subsequent pages of text, second and third header lines are added. The second header is a blank line, and the third is "Letters of Warren Sunkel." To make room for the added header lines, both the header margin (**.HM 4**) and top margin (**.MT 7**) are changed from their default values.

Notice the other print control characters in the headers and footer (**^B** and **^Y**), and the blank header (.H2 ↵). A blank header must contain at least two spaces; otherwise WordStar omits that header (or footer) line from the printout.

WordStar's Default Page Format Settings

The diagram below shows WordStar's default page format settings for a standard 8½-by-11-inch sheet of paper.



Printing the First Page of a Document on Letterhead

This is the format for the first page of an organization's formal correspondence on preprinted letterhead.

```
.. This is STATIONERY format:
..
.RR--!-----!-----!-----!-----!-----!-----!-------------#------R
..
..FIRST PAGE:
.MT 10
.MB 5
.PO 14
.OP
```

In this example, the left margin is at column 1, the right margin at column 65. There are 7 regular tab stops and 1 decimal tab stop.

The large top margin of 10 accommodates the preprinted letterhead. A header is not used on this page. The bottom margin is only 5 lines. The page offset is increased to 14. Page numbering is turned off.

The example below shows the format for the following pages of the letter. Preprinted paper isn't used, so there's room for headers. Notice that the headers plus the header margin equals the top margin (2 + 4 = 6).

```
..FOLLOWING PAGES:
..FOR THE PRINTOUT, BE SURE TO ANSWER "Y" TO "PAUSE BETWEEN PAGES"
..PRINT OPTION.
.H1 [Date]
.H2 [Addressee]
.HM 4
.MT 6
.PG
.PC 1
.FM 3
```

The command **.PG** restores page numbering, beginning on this page. **.PC 1** places the page number in column 1. It isn't necessary to set a new page number with **.PN** because, in this case, the page number to be printed (2) is the same as the page number of the document.

Instead of the default footer margin of 2 lines, a 3-line margin is set (**.FM 3**). It's important that the bottom margin (5 lines) have room for the default page number footer (1 line) and footer margin (3 lines). Five is more than 1 plus 3, so this is fine.

> ***TIP*** *You might want to save this format on disk as a document. Every time you type a letter, use* ***^KR*** *to insert the document into the letter.*

Printing a Standard Business Envelope

To print an envelope, consider it a document with a short page length and special margins. You can create a standard format for envelopes and store the format in a separate file. Then, when you want to print an envelope, you can read in the format file with the **^KR** command.

The format in the example below is suitable for a standard 9½-by-4-inch business envelope, printing 10 characters per inch. Type the following dot commands in the order given:

```
.PA             (begin the envelope on a new page)
.PL 25          (set the page length to accommodate the envelope size)
.MT 12          (start printing 12 lines from the top of the envelope)
.MB 0           (eliminate the bottom margin)
.PO 40          (begin printing 40 spaces from the edge of the envelope)
.OP             (do not print page numbers on the envelope)
```

If you use different size envelopes, you can create your own formats using different values with these dot commands.

Follow these steps after typing your letter.

1 Bring the envelope file into the letter at the very end with **^KR**. The **.PA** at the beginning of the envelope format in the above example will end the letter.

2 Type the name and address for the envelope in line 1, column 1 (immediately below the dot commands). You could also use block commands to mark and copy the name and address from the beginning of your letter.

3 Save the document with **^KD**.

4 Print the file, selecting the print option to pause between pages, so you can replace the stationery with an envelope at the appropriate time. (Your printer must be capable of printing one sheet at a time to do this.)

To use this procedure with form letters, make sure that your form letter begins with all the dot commands needed to restore the margins, page length, and page offset changed by those in the standard envelope file. "Merge Printing Envelopes for a Mass Mailing," found later in this appendix, is an example of another procedure for merge printing envelopes.

A Typical Master Document for Merge Printing

Following is a sample master document for a form letter that includes variable names and merge print dot commands:

```
.DF SERVICE.DTA
.RV NAME,SALUTATION,ADDRESS1,ADDRESS2,ADDRESS3
.SV DATE, July 1, 1987
.CS Printing letter to &NAME&.
..MAKE SURE THERE IS ROOM FOR LOGO ON LETTERHEAD
.MT 20
.OP

&DATE&

&NAME&
&ADDRESS1/O&
&ADDRESS2/O&
&ADDRESS3/O&

Dear &SALUTATION&:

Thank you for your recent purchase at our store. I know that you will be satisfied
for many years. However, if a problem ever arises, remember that our customer
service department is located at

                1234 Van Ness Avenue
                San Francisco, CA 94900

You can also call us at (415) 123-1212 during normal business hours.

Sincerely,


Charles Darwin
Customer Service Manager
.PA
```

The five variables in this form letter are surrounded by ampersands (&). The data file named in the **.DF** command, SERVICE.DTA, might look like this:

```
John Doe, Mr. Doe, 43 Oak Drive, ,"Concord, CA  94567"
Jane Smith, Ms. Smith, 108 Market St., Apt. 5, "Reno, NV  97732"
Amy Jones, Mrs. Jones , , , "Tahoe Pines, CA  97654"
```

Merge Printing Envelopes for a Mass Mailing

You can use the data file from the previous example to print envelopes for your mailing; however, you'll need to create a separate master document. Here's how to create a new master document for printing standard envelopes.

```
.OP
.DF SERVICE.DTA
.RV NAME,SALUTATION,ADDRESS1,ADDRESS2,ADDRESS3
.AV "Put an envelope in the printer now. Press Enter when ready.",X
.CS
.PL 25
.MT 12
.MB 0
.PO 40
&NAME&
&ADDRESS1/0&
&ADDRESS2/0&
&ADDRESS3/0&

.PA
```

The dot commands above select the data file, read the data, and interrupt printing, so you can put in a new envelope. They also set up the format for a standard 9½-by-4-inch envelope.

The **.AV** command tells WordStar to pause during merge printing and display a message. The "X" variable in the **.AV** command is not really used. It's there because the **.AV** command requires a variable for its answers. Using **.AV** is actually a trick to make the printer pause. When printing pauses, you can read the message, insert an envelope, and press ↵ to continue. The **.CS** command clears the screen after you insert each envelope and press ↵.

The next four dot commands set up the format for the envelope—the page length, top and bottom margins, and offset.

The address variables print the name and address from the data file. The command **.PA** starts a new envelope.

Merge Printing Three-Across Mailing Labels

This example shows you how to set up a format for merge printing names and addresses from a data file onto mailing labels. The dot commands used here are appropriate for three-across, general purpose labels measuring 3½-by-15/16-inches, printed with 10 characters per inch and 6 lines of text per inch. Notice that the lines are numbered; corresponding explanations follow the example. (Do not type the line numbers in your own work. Remember that dot commands must begin in column 1.)

```
 1  .OP
 2  .PF OFF
 3  .PO 2
 4  .PL 6
 5  .MT 0
 6  .MB 0
 7  .SV L = LLLLLLLLLLLLLLLLLLLLLLLLLLLLL
 8  .DF LABEL.DTA
 9  .RV name1,address1,city1,state1,zip1
10  .RV name2,address2,city2,state2,zip2
11  .RV name3,address3,city3,state3,zip3
12  .SV cityline1=&city1&, &state1& &zip1&
13  .SV cityline2=&city2&, &state2& &zip2&
14  .SV cityline3=&city3&, &state3& &zip3&
15  &name1/L&     &name2/L&     &name3/L&
16  &address1/L&     &address2/L&     &address3/L&
17  &cityline1/L&     &cityline2/L&     &cityline3/L&
18  .PA
```

Explanations by line number

Line	Explanation
1–6	Note that page numbers are omitted, print time formatting is off, the page offset is set to 2, page length is set to 6 (each row of labels is considered to be a page), and no top or bottom margin is used.
7	This command defines a format named **L** to be a left-justified field 30 characters wide.
8–11	The next step is to identify the data file to be used and read data from the data file.
12–14	These lines show a little trick for combining data items into a new data item. The last line of each label is to be the same width as the other two lines. We could have defined formats for each of the variables **city**, **state**, and **zip** so that their combined widths would have been 30 characters. However, the method shown here is easier to work with.
15–17	There are 5 spaces between each variable reference. During merge printing, each variable is replaced by a field 30 characters wide, with data left justified within the field. Any spaces already in the printed line are kept. WordStar inserts the 30-character field for **name1** (with data left-justified), prints 5 spaces (which positions the printer at the left side of the second label), inserts the 30-character field for **name2**, and so on.
18	Inserting a page break goes to the next set of three labels. (Do not use form feeds when you merge print.)

The data file used for the labels above, LABEL.DTA, might look like this. This file makes two sets of three labels.

```
Bill Smith,12345 Baldwin Street,Anaheim,CA,90100
Jane Doe,54321 Sunset Street,Eugene,OR,97502
Jorge Jiminez,22 Santiago Blvd,Los Angeles,CA,90001
Marshall Montgomery,9433 Avenue of the Americas,New York,NY,10011
Sally Ferdinand,1123 Parkside Way,Kansas City,MO,64523
Peter McLeod,1255 Arroyo Road,Albuquerque,NM,89776
```

What if Some Records Have Missing Data?

What happens if there is no street address for someone in a mailing list? A row of labels might look like this:

```
Bill Smith                Roland Tums               Jane Doe
12345 Baldwin Street                                54321 Sunset Street
Anaheim, CA 90100         Tinyhamlet, MO 64423      Eugene, OR 97502
```

The middle label would be more professional looking if the city, state, and ZIP appeared on the second line, like this:

```
Roland Tums
Tinyhamlet, MO 64423
```

The symbol "/O" appended to a variable name eliminates the line if there is no data for the variable. However, /O doesn't work that way for these mailing labels, because the variable is not the only text on the line.

The problem can be solved by using conditional dot commands. The mailing list consists of a name, street, city and state, and ZIP code. The data item that could be missing is the street.

After WordStar has read all the variables from the data file for a row of labels, it can check to see if any street addresses are missing. If ADDRESS1 is missing (or, in other words, equal to nothing), the data from NAME1 is put in the variable ADDRESS1. Then the data from NAME1 is removed. We end up with the following:

NAME1	(which is now nothing)
ADDRESS1	(which now contains the data that was in NAME1)
CITYLINE1	(this line is not affected)

We then check to see if ADDRESS2 is missing. If so, we go through the same procedure with label 2. Finally, we check ADDRESS3.

Here are the conditional dot commands. In the example, they go just before the first line of labels (that is, the line with &NAME1/L&). Notice that the lines are numbered; corresponding explanations follow the example. (Do not type the line numbers in your own work. Remember that dot commands must begin in column 1.)

```
1  .IF &ADDRESS1&=
2  .SV ADDRESS1,&NAME1&
3  .SV NAME1,
4  .EI
5  .IF &ADDRESS2&=
6  .SV ADDRESS2,&NAME2&
7  .SV NAME2,
8  .EI
9  .IF &ADDRESS3&=
10 .SV ADDRESS3,&NAME3&
11 .SV NAME3,
12 .EI
```

Explanations by line number

Here is an explanation of the dot commands between the **.IF** and its corresponding **.EI**.

Line	Explanation
1	Press ↵ after the equal sign (=). There can be spaces after the equal sign.

2	Remember that a variable surrounded by ampersands (&) refers to the data contained in the variable. Here, the **.SV** command stores the data in NAME1 in the variable ADDRESS1. Both NAME1 and ADDRESS1 now contain the same data.
3	This **.SV** command removes the data from NAME1 by storing "no data" in it.
4	This indicates that the conditional portion is finished.
5–12	The dot commands in these lines have the same effect on the next two address lines as the dot commands in lines 1–4 had on the first one.

Note that when there is data for all three ADDRESS1 variables, the **.IF** commands are skipped.

You can modify this basic procedure to cover situations when two or more variables might be missing by using more **.IF** commands.

> ***TIP*** *You might want to create a "dummy" file of three names and addresses that you print just before printing your real data file. That way, you can check the position of the labels in the printer and make any necessary adjustments.*

Merging and Centering a Name and Address in a Proposal

The next example shows how to insert and center a name and address in a proposal. This example uses the same data file as the one above. Notice that the lines are numbered; corresponding explanations follow the example. (Do not type in the line numbers in your own work. Remember that dot commands must begin in column 1.)

```
1   .OP
2   .PF OFF
3   .SV X,CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
4   .DF label.dta
5   .RV name,address,city,state,zip
6   .SV cityline=&city&, &state& &zip&
7                               This is an
8
9                            OFFICIAL PROPOSAL
10
11                                   to
12
13  &NAME/X&
14  &ADDRESS/X&
15  &CITYLINE/X&
16
17  .PA
```

Explanations by line number

Line	Explanation
1–6	Page numbers are omitted and print time formatting is off. Line 3 defines a format, **X**, which is 65 characters wide (same width as the ruler line). Data is to be centered.
7–12	These lines of text are centered in the normal way, with the **^OC** command.
13–15	Because the format definition is the same width as the ruler line, the data items will be centered properly with respect to the text in lines 7–12.

The result is a separate cover page for each person in the data file to whom you are sending a proposal.

Math, Formatting, and Conditional Dot Commands in a Master Document

This example demonstrates more merge printing features, including math functions, merge print formatting, and merge print conditional dot commands. Notice that the lines are numbered; corresponding explanations follow the example. (Do not type the line numbers in your own work. Remember that dot commands must begin in column 1.)

```
 1  .OP
 2  .DF PURCHASE.DTA
 3  .RV first,last,street,city,state,zip
 4  .RV item1,$item1,item2,$item2,item3,$item3,item4,$item4,item5,$item5
 5  .MA total=&$item1&+&$item2&+&$item3&+&$item4&+&$item5&
 6  .SV n, $$$,$$$.99
 7  .SV L, LLLLLLLLLLLLLLLLLLLLLLLL
 8  .SV R, RRRRRRRRRRRRRRR
 9  .SV date, March 13, 1987
10  .IF &total& #) 25.00
11                                              &DATE/R&
12
13
14  Morley's Anyeverything Store
15  #23 Dollar Circle
16  Concord, CA 94599
17
18
19  &first& &last&
20  &street/O&
21  &city&, &state& &zip&
22
23  .IF &total& #) 250.00
24  Dear Mr. &last&:
25  .EL
26  Dear &first&,
27  .EI
28
```

```
29
30  Our records show that you have purchased five or more items
31  at our warehouses in the last month, for a total of $&total& in
32  merchandise. In appreciation of your patronage, we are offering
33  the following discount, good on the purchase of any one item from
34  our gigantic inventory:
35
36  .IF &total& #(= 250.00
37                          ten percent
38  .EL
39                          five percent
40  .EI
41
42  To help jog your memory, here is the list of the last five
43  items you bought from us:
44  .PF OFF
45
46              &item1/L&&$item1/n&
47              &item2/L&&$item2/n&
48              &item3/L&&$item3/n&
49              &item4/L&&$item4/n&
50              &item5/L&&$item5/n&
51
52              Total                       &total/n&
53
54  .PF DIS
55  Just bring this letter with you to claim your discount.
56
57
58  Yours truly,
59
60
61  Morley Smith
62  .PA
63  .EL
64  .DM &FIRST& &LAST& SPENT ONLY &TOTAL&. DON'T WASTE THE POSTAGE.
65  .EI
```

Explanations by line number

Line	Explanation
1–4	The first four lines contain dot commands to omit page numbers, identify the data file to be used, and read the data from the data file.
5	The command **.MA** creates a new variable, **total**, which contains the sum of five data items read from the data file. Note that all data items used with this dot command must be numbers. (If any of the data items contains text, you'll see the error message, "Can't understand equation.")
6–8	These lines define formats. Format **n** is a number format; formats **L** and **R** are text formats.
9	This line stores the data item "March 13, 1987" in the variable "date."
10	This conditional dot command checks to see if the variable "total" is greater than 25.00. If it is, WordStar goes on to line 11, prints the date, and continues with the letter. If the value is not greater than 25.00, WordStar skips all the way down to the **.EL** dot command in line 63.
11	This is the first formatted variable. Format **R** is 17 characters wide, right justified. The first ampersand (&) in the variable is positioned 17 character spaces from the right margin.
12–18	These lines contain normal text, including blank lines.
19–22	These lines contain variables. Customers' names and addresses from the data file will be inserted here.
23–27	If "total" is greater than 250.00, WordStar prints line 24 in the letter; otherwise, WordStar prints line 26.

29–35	These lines consist of normal text, except for the insertion of "total" in line 31. Note that format **n** is not used here, although it could be used, in which case the "$" in line 31 would be unnecessary.
36–40	If "total" is less than or equal to 250.00, WordStar prints line 37; otherwise, it prints line 39.
41–43	These lines contain normal text, including blank lines.
44	Print time formatting is turned off in case some of the lines in the table below happen to extend beyond the right margin.
46–53	This represents a two-column chart. The left column is a list of the items the customer bought, and the right column is a list of the corresponding prices. Each variable is formatted. Format **L** is 25 characters wide and left justified; format **n** is 10 characters wide and right justified. You do not need to include any spaces between data items in the form letter because the formats will take care of that. Note that line 52 has text rather than a variable on the left. To make sure that "total" lines up with the other numbers above it, the first ampersand (&) in &total/n& must be in the column 26 character spaces to the right of the "T" in the word "Total."
54	Print time reformatting is changed to discretionary so that a paragraph is realigned only if data is inserted.
55–62	These are normal text lines and blank lines to end the letter. Note that a page break (**.PA**) is included at the end of the letter.
63–65	If WordStar has gotten here because "total" is not greater than 25.00 (see line 10), the message in line 64 is displayed when you're at the Printing screen, and WordStar goes on to the next letter, if there are more records in the data file.

The data file used with the form letter above, PURCHASE.DTA, looks like this:

```
Stan,Smith,12 Cork Road,La Grange,CA,94545,railroad ties,23.45,fish emulsion
1223.32,cam shaft,1255.99,tires,398.33,cat food,5.98
Larry,Canary,3611 Pastaman Avenue,Oakland,CA,94601,cheese dinner,15.49
automotive parts,99.12,pasta maker,25.89,anthracite coal,25.99,lawn rake,2.98
Molly,Harper,11 Blue Avenue,Santa Cruz,CA,95078,cloth,5.00,lettuce,2.98
thread,.99,wax,3.98,coffee,9.98
Kevin,Levine,4014 Ballfour Drive,St. Louis,MO,63199,auto parts,19.89
welding steel,45.98,acetylene/oxygen, 99.98, black pepper, 587.88
bromide,2.98
```

Advanced Math and Formatting Functions for Merge Printing

The following letter might come from a finance company offering to refinance loans at a lower interest rate. There are equations to calculate monthly payments and to calculate a new loan amount that results in the same monthly payments. Notice that the lines are numbered; corresponding explanations follow the example. (Do not type the line numbers in your own work. Remember that dot commands must begin in column 1.)

```
 1  .OJ OFF
 2  .OP
 3  .DF FINANCE.DTA
 4  .RV title,first,last,street,city,state,zip
 5  .RV firstloan,firstint,nummon,payoff
 6  .MA I1=&firstint&/1200
 7  .MA firstpay=&firstloan&*&I1&*((&I1&+1)^&NUMMON&)/(((&I1&+1)^&NUMMON&)-1)
 8  .SV R,RRRRRRRRRRRRRRR
 9  .SV a=$$$,$$$.99
10  .SV date,March 27, 1987
11  .SV newint,13.75
12  .SV firstloan=&firstloan/a&
13  .SV firstpay=&firstpay/a&
14  .SV payoff=&payoff/a&
```

```
15                                                          &DATE/R&
16
17  FLEIBEI KNIGHT FINANCE CO.
18  1234 Rolling Stat Drive
19  City of Commerce, CA  90001
20
21  &title&. &first& &last&
22  &street&
23  &city&, &state& &zip&
24
25  Dear &title&. &last&:
26
27  We are pleased to be your finance company. To show you how
28  pleased we are, let us make you an offer.
29
30  You borrowed &firstloan& at &firstint&% interest. Your monthly
31  payments are &firstpay&. Our records indicate that the current
32  pay-off amount on your loan is &payoff&.
33
34  We are now offering our customers an interest rate of &newint&%.*
35  We can refinance your old loan at this new low interest rate.
36  .MA i2=&newint&/1200
37  .MA newloan=&firstpay&*(((&I2&+1)^&nummon&)-1)/(&i2&*(&I2&+1)^&nummon&)
38  .SV newloan=&newloan/a&
39  .MA moremon=&newloan&-&payoff&
40  .SV moremon=&moremon/a&
41
42  Now, here's the deal, &title&. &last&. For monthly payments of
43  &firstpay& (for &nummon& months), we can now lend you
44  &newloan&. This leaves you with &moremon& to do with as you
45  please.
46
47  Pay off other debts, take a longer vacation-the choice is yours,
48  &title&. &last&. Phone us at 555-4321 today.
49
50
51  Yours truly,
52
53
54
55  Helen Waite, Credit Manager
56
57  .MA apr=(((&i2&+1)^12)-1)*100
58  .SV 1,ZZ.99
59  * Annual percentage rate = &apr/1&
60  .PA
```

Explanations by line number

Line	Explanation
1–5	The first five lines contain dot commands to turn off justification, omit page numbers, identify the data file to be used, and read the data from the data file.
6	Line 6 performs a calculation that simplifies the equation in line 7.
7	An equation for calculating loan payments from the amount financed, interest rate, and terms is as follows: $P = A * i * (i + 1)^n/((i + 1)^n - 1)$ where ***P*** is the amount of each payment. ***A*** is the amount financed. ***i*** is the interest rate per payment interval. If the payment interval is monthly, ***i*** is divided by 12. ***i*** must be converted from a percentage to a decimal fraction. Line 6 performs this task in this example. ***n*** is the total number of payments. For example, monthly payments for fourteen years total 168 payments. In this equation, **firstloan** (from the variable in line 5) is the amount financed. **I1** represents an interest rate, which also comes from the the variable **firstint** in the data file (line 5). It is then divided by 1200 in line 6 to make it suitable for the equation. The total number of payments in our equation is the variable **nummon**. Its value comes from the data file (line 5).
8–9	These lines define merge printing variable formats.
10–11	Data items are assigned to the variables **date** and **newint**.

12–14	**Firstloan**, **firstpay**, and **payoff** will be included in the text later in the letter. When data items are formatted with format **a**, they might end up with leading spaces, which would leave a gap in the text before the number. The technique shown in these lines removes any leading spaces from the data item after it is formatted. When **firstloan**, **firstpay**, and **payoff** are used in the text, they do not need to be formatted. (See lines 30–32).
15–35	This is the body of the letter, including variables.
36–37	**I2** is calculated in line 36 and is based on data supplied in line 11. Line 37 is essentially the same equation as in line 7, except it calculates a new amount to finance when the payments are known.
38	This strips leading spaces from the new loan amount.
39–40	Line 39 calculates the difference between the new loan amount and the payoff amount, and line 40 strips leading spaces.
41–56	These lines comprise the remainder of the text of the letter.
57	This is an equation for calculating Annual Percentage Rate from the simple monthly interest rate: $APR = ((i/12 + 1)^{12} - 1) * 100$
58	This defines the format for the newly calculated APR. Note that without this format, WordStar might display the result of the calculation as a number up to 14 digits long. The format insures that only two decimal places will be displayed. (The decimal is not rounded, but truncated.)

The data file used for the form letter above, FINANCE.DTA, looks like this.

```
Mr,Larry,Canary,3611 Strawman Ave.,Oaklandon,IN,47501
12000,16,168,8900.44
Ms,Sarah,Bellum,#2 Carotid Artery West,Hoboken,NJ,08555
9000,17.25,120,5231.34
Mrs,Molly,Smith,"1234 Auto-reverse Lane, Suite 2",Austin,TX,87855
15000,15.75,240,11156.96
```

Merge Printing Tips

Using Data From a Variable as a Screen Message

You can insert data from variables into screen messages. This is especially handy for displaying data as it's being retrieved from the data file, as shown below.

```
.DF SAMPLE.DTA
.RV name,address1,address2,address3,address4
.DM This form letter will be printed for &name&.
```

By reading the message on the screen as the form documents are printing, you can see at a glance where you are in the data file. To make sure your data file is free of errors or to check for missing data, you can even make a temporary document with only the above three dot commands in it. When you merge the document, WordStar will display all the names. You can write **.DM** commands to display any variables you like. Just be sure to put the **.DM** after the commands that get data for a variable.

Changing Data for One Variable in a Form Letter

In the printout of a form letter, you might want to change the data for one variable in each copy of the letter. You could make separate mailing lists, but sometimes that's inconvenient.

In this sample mailing list data file, there are just two records:

```
Susan, &var1&
Charlie, &var2&
```

The form letter looks like this:

```
.SV var1, trip to Disneyland
.SV var2, new car
.DF mailing.lst
.RV name, var

Dear &name&,

Your sweepstakes prize is a &var&. Congratulations!


Yours truly,
Prize coordinator
.PA
```

In the printout, the variable "var" will be replaced with "&var1&" or "&var2&," because they're in the data file. Since these are variables themselves, they'll be replaced in turn with "trip to Disneyland" and "new car," respectively.

This is called **recursion**. In the data file, you tell WordStar which variable goes with which person (**Susan, &var1&** and **Charlie, &var2&**). Then, when you merge, you specify the variables (**.SV var1, trip to Disneyland** and **.SV var2, new car**).

Proofreading Your Printouts Before Merge Printing

Keep in mind that in merging documents with data files, everything has to be just right. Take your time and proofread your work carefully. There are two ways to test your printouts without actually printing them on paper.

You can "preview" your work by printing the file to disk. Refer to **Printing to disk** in the "Reference Guide" for details. Once you've printed a file to disk, you can open it with WordStar and see a copy of each merge document with all variables inserted.

If your data file is very large, the method above may not be practical, because the file could fill up your disk. Another way to test your work is to make a duplicate file of your document's merge print commands, but don't put any text in the file.

To do this, make a copy of your document. Working with the copy, mark the entire file as a column block and delete the block. Only the dot commands and carriage returns will remain. Delete the carriage returns. Add a **.DM** command exactly like every **.RV** command, except that the variable names in the **.DM** command must be enclosed in ampersands (&). (Do the same for **.MA** variables if you want to see them displayed.) Then print this file.

Since there's no text in this file, it won't actually print, but WordStar will display every data item and variable on the Printing screen in the appropriate sequence. If you've made any errors, the display will show them. Depending on the type of error, the display may stop at the mistake, or it may skip the mistake and start "scrambling" the data on the document.

Appendix C

Customizing WordStar

WordStar comes set up to work the way most users prefer, but you can easily customize it to fit your needs exactly.

The WSCHANGE program makes customizing WordStar easy. You can change many items including the function keys, the colors on a color monitor, and the initial settings for such things as margins, tabs, or menu level display. You can even return everything to the way it was when you first purchased this release of WordStar.

This appendix tells you about WSCHANGE; it explains the kinds of changes you can make and how to make them. There is also a section of step-by-step instructions for making the most common changes.

Note: To see a list of the menu choices in WSCHANGE, see the README file.

How WSCHANGE Works

WordStar stores its operating instructions in the WS.EXE file. This is the WordStar "program file." The WS.EXE file has a special section called the "user area" that contains information on most of the parts of WordStar you can customize.

WSCHANGE helps you make changes to this user area. You choose the item you want from a menu, then WSCHANGE tells you the current setting and asks if you want to change it. You can type **Y** for yes, **N** for no, or a number for settings such as margins or tabs.

If you have a more technical background, WSCHANGE lets you actually look at sections of the user area and directly type new data. For more information, see "Patching WordStar" in this appendix.

Starting WSCHANGE

To start WSCHANGE, follow these instructions. (If you want to create more than one version of WordStar, read the next section for instructions on starting WSCHANGE.)

IF YOU HAVE A TWO FLOPPY DISK COMPUTER

1. Put your copy of the Program disk in drive A and the Installation disk (which contains the WSCHANGE.EXE and WSCHANGE.OVR files) in drive B.
2. Type **b:** and press ↵ to log on to the B drive. "B>" should appear on your screen.
3. Type **wschange a:ws** and press ↵. You'll see the Main Installation Menu.

IF YOU HAVE A HARD DISK COMPUTER

1. Log on to your \WS4 directory.
2. Type **wschange ws** and press ↵. You'll see the Main Installation Menu.

Creating Extra Versions of WordStar

Ordinarily, WSCHANGE starts with the settings in your WS.EXE file and saves any changes back to this file when you're done. However, WSCHANGE can save your modifications to a different file so you can have more than one version of WordStar.

Note: Two floppy disk computer users should check the space on their floppy disk to make sure they have room for two versions of the file.

To create different versions of WordStar, follow these steps:

1. Set up your disks as described above, but type just **wschange** (don't type the "ws") and press ↵.
2. When prompted for the name of the file to install, type **ws** (two floppy disk computer users type **a:ws**) and press ↵ to start with your original file. (Once you've created versions, you can type the name of one of these versions.)
3. Next you'll be prompted for the name of the new file. Press ↵ to save the changes to the same file, or type a new filename (up to eight letters long) and press ↵. You'll see the Main Installation Menu.

Note: To start the new version of WordStar, remember to type the name of the new file.

Using WSCHANGE

When you start WSCHANGE, you see the Main Installation Menu.

```
Main Installation Menu

A  Console.........Monitor              Function Keys         Video Attributes
                   Screen Patches       Keyboard Patches      Interface Patches

B  Printer.........Printer Choices      Sheet Feeders         Printer Library
                   Printer Patches      Printing Defaults     Printer Interface

C  Computer........Disk Drives          Operating System      Patches
                   WordStar Files       Directory Display     Memory Usage

D  WordStar........Page Layout          Editing Settings      Help Level
                   Spelling Checks      Nondocument Mode      Indexing
                   Shorthand            Merge Printing        Miscellaneous

E  Patching........General Patches      Reset All Settings    Auto Patcher

X  Done with installation
?  Help

Enter your menu selection...
```

Choose the area you want to change by pressing the appropriate letter from the menu. For example, if you want to install your printer, press **B**. Many of the choices on this menu lead to submenus with more specific choices.

At most menus, you can press the **?** key to see a help screen that explains the choices on the menu.

WSCHANGE offers two ways to change WordStar:

- ***With Prompts*** This is the easiest method. WSCHANGE shows you the current setting and prompts you to change it. You can mostly answer with "yes," "no," or a number.

  For example, if you want to change the default right margin, the prompt says: "Currently: 65 Enter new value (or ↵ if no change)."

- ***With Patches*** This method is very technical and should be used only if you have a working knowledge of patching and hex code.

  To patch the program, choose one of the menu entries with the word "patches" in its name.

  CAUTION *Be careful when using patches from a previous release of WordStar. Patches that refer to data addresses may have disastrous results in this release since data has moved. However, patches that refer to user area labels rather than to addresses may work on this release since labels have not changed. Try the patch on a copy of the program.*

For information on changing WordStar with prompts, read "Changing Prompted Settings" below. For information on patching WordStar, turn to "Patching WordStar."

Changing Prompted Settings

To change a setting, choose the area you want to change from the Main Installation Menu. You'll see a new list of menus. Items are organized on the menus by topics; find the menu that lists the item you want to change.

The menu shows you the current setting for the item. (The menu may also show the user area label for this item. This label is for reference if you use the patching menus.) Press the letter next to the item and WSCHANGE helps you make the change.

When you type a new setting, WSCHANGE checks that your answer falls within limits. If you enter a number that is too large or too small, WSCHANGE displays an error message, for example, "Out of range . . . must be 1–255." Type a new value that is inside the limits.

Remember that WSCHANGE can't check everything, so use common sense. For example, don't make the right margin a lower number than the left margin.

A Note About Defaults

Use WSCHANGE to change the default settings, the settings in effect whenever you turn on WordStar.

You can also change many of these settings while you're using WordStar. But any changes you make to the settings while editing are temporary changes; the next time you start WordStar, your default settings will again be in effect.

Examples of Changing Specific Areas

The following examples tell you step by step how to change the most common settings.

Changing the Function Keys

You can change the 40 function keys to issue whatever commands or letters you like. You can change the labels that appear at the bottom of the editing screen or you can turn these labels off. You can also reset the keys to match their settings in WordStar 3.3.

To change the function keys, follow these steps:

1. At the Main Installation Menu, press **A** to see the Console Menu.
2. Press **B** to change the function keys.
3. Follow the instructions onscreen to change any function keys you want.
4. When you finish changing a function key, you'll be prompted to change the label for the function key.
5. When you're done, press **X** twice to return to the Main Installation Menu.

To set the function keys back to their settings in WordStar 3.3, follow these steps:

1. At the Main Installation Menu, press **E** to see the Patching Menu.
2. Press **A** to choose auto patcher.
3. Type the filename **WS3KEYS.PAT** and press ←┘. (This file comes on your Installation disk.)
4. Press any key.
5. Press **X** to return to the Main Installation Menu.

Creating a Smaller WSPRINT.OVR File

You can save room on your disk by creating a smaller WSPRINT.OVR file. The WSPRINT.OVR file that comes on your Program disk contains all the information WordStar needs to work with any printer on the Printer Selection Menus. However, you need only the information that applies to your printer.

To create a smaller WSPRINT.OVR file, follow these steps:

1. At the Main Installation Menu, press **B** to see the Printer Menu.
2. Press **C** to see the Printer Driver Library Menu.
3. Press **B** to create a smaller library file.
4. Read the instructions on the screen. Type the numbers for your printers and any other drivers you want to save, then press ←┘. (The driver name for your default printer appears at the top of the screen.)

   You may want to include these drivers:

$INDEX	to generate an index
$TOC	to generate a table of contents
PRVIEW	to preview your printout in a disk file
XTRACT	to extract merge print data
ASCII	to convert a document to an ASCII file

5. When prompted, press any key to return to the menu.
6. Press **X** twice to return to the Main Installation Menu.

The drivers you specify are saved in the WSPRINT.OVR file and the original WSPRINT.OVR file is renamed WSPRINT.BAK. After you quit the WSCHANGE program, erase the WSPRINT.BAK file. Remember that you still have a copy of the original file on your original Program disk.

Changing the Installed Path

If you copied your WordStar program files into a directory other than \WS4, you must change the installed path for these files as follows:

1. At the Main Installation Menu, press **C** to see the Computer Menu.
2. Press **D** to see the WordStar Files Menu.
3. Press **A** to choose file search path.
4. Press **Y** to change the path. Then type your new path and press ↵.
5. Press **X** twice to return to the Main Installation Menu.

WordStar uses this installed search path when it looks for its program files. WordStar searches for files in this order:

Current drive and directory
Current drive and installed search path
Installed default drive and its current directory
Installed default drive and installed search path

TIP *If you have more than one release of WordStar on your disk, you must make sure that this release of WordStar finds its own files. You can change the search order shown above so WordStar Release 4 looks for its files only in the installed search path on a specific drive. To do this, after you follow steps 1–4 above, choose each filename from the WordStar Files Menu and add the drive letter and a colon (for example, C:) to the beginning of each filename.*

Changing Margins

You can change most of the WordStar initial margin settings. Here is an example of changing the default top margin:

1. At the Main Installation Menu, press **D** to see the WordStar Menu.
2. Press **A** to see the Page Layout Menu.
3. Press **A** to see the Page Size and Margins Menu. This menu offers you choices of page length, margins, and page layout.

4 Press **B** to choose top margin. You'll see the prompt, "Currently: 3. Enter new value (or ↵ if no change)."

5 Type the new top margin you want as the default and press ↵.

6 Change any other items you want on this menu, then press **X** three times to return to the Main Installation Menu.

Loading the Main Dictionary into Memory

If your computer has 640K of memory or more, you can have WordStar load the main spelling dictionary into memory. This makes finding words faster than if WordStar has to look for them on the disk.

Note: If you have a two floppy disk system, be sure to copy your personal dictionary to your Program disk.

WordStar will load the main dictionary into memory the first time you run a spelling check in each editing session. If you have a two floppy disk computer, you won't have to swap disks again to check spelling in this editing session. Follow these steps:

1 At the Main Installation Menu, press **D** to see the WordStar Menu.

2 Press **C** to see the Other Features Menu.

3 Press **A** to choose spelling checks.

4 Press **E** to choose dictionary usage.

5 Press **D** to load the main dictionary into RAM.

6 Press **Y** to confirm.

7 Press **E** to change the main spelling dictionary buffer.

8 Type **280** and press ↵.

9 If you have a two floppy disk computer, press **C** to tell WordStar the personal dictionary is on the Program disk.

10 Press **Y** to confirm.

11 Press **X** four times to return to the Main Installation Menu.

Changing Printing Defaults

You can change the default answers to the questions that appear at print time. Here is an example of changing the default answer to the form feeds question:

1 At the Main Installation Menu, press **D** to see the WordStar Menu.

2 Press **B** to see the Editing Settings Menu.

3 Press **I** to see the Printing Defaults Menu.

4 Press **B** to choose form feeds.

5 Press **Y** to change the current answer.

6 Change any other printing defaults you want, then press **X** three times to return to the Main Installation Menu.

Selecting More Than One Printer

WordStar comes set up to work with over fifty printers. The printer you choose from the Printer Selection Menu becomes your default (or primary) printer. Whenever you print, this is the printer WordStar uses automatically.

If you want to use a different printer, just go through the questions at print time till you get to the "Name of printer" prompt. You'll see a directory of all the printers. Select your alternate printer from this list.

Keep these points in mind:

- ***Printer port*** Each printer is connected to a printer port at the back of your computer. WordStar looks for printers on the LPT1 port. If any of your printers are connected to different ports, use WSCHANGE to tell WordStar the correct ports.

  WSCHANGE lets you choose two ports, a primary port and an alternate port. Whenever you print on your default printer, WordStar sends the output to the primary port. If you choose any other printer, WordStar sends the output to the alternate port. See the section below for instructions on changing the installed printer ports.

  TIP *You can also specify a port at print time. When prompted for the name of the printer, type one of the printer driver names followed by a "greater than" symbol (>) and the name of the port or device. For example, type* ***TI855>LPT2*** *and press* ↵.

- ***Sheet feeders*** If one of your printers has a sheet feeder, use WSCHANGE to choose that printer as your default printer and choose your sheet feeder from the menu. Then change the default answer for the "Use form feeds" prompt to "yes" (on the Printing Defaults Menu) or remember to answer yes to this prompt whenever you print with this printer.

  Note: To print documents that contain sheet feeder (.BN) commands on printers that don't have sheet feeders, answer no to the form feeds question at print time.

- ***Print commands*** If you use WSCHANGE to define the custom print commands (^PQ, ^PW, ^PE, ^PR), WordStar will send the defined control sequence to your printer whenever it sees one of these commands in your document. Since different printers use different control sequences, be sure the commands in your document are customized for the printer you're using.

  TIP *You can use .XQ, .XW, .XE, and .XR to temporarily change the custom print commands so they issue the correct control sequences for the printer you're using. For more information, see* ***Custom print controls*** *in the "Reference Guide."*

Changing the Printer Port

WordStar assumes your printer is connected to the LPT1 port on the back of your computer. If your printer is not connected to LPT1, change the printer port as follows:

1. At the Main Installation Menu, press **B** to see the Printer Menu.
2. Press **F** to see the Printer Interface Menu.
3. Press **A** to see the printer port selection.
4. Press the letter next to the port you want to choose.
5. Press **X** three times to return to the Main Installation Menu.

Note: If you select LST (default list device) or AUX (auxiliary output) as your printer port, **^C** won't work to scroll your screen down while doing background printing. Press **PgDn** instead.

If you notice a pause in your editing screen when doing background printing, read the section below.

Adjusting Printing Speed

If you have a serial printer or if your printer port is installed as a LST or AUX device, your editing screen may occasionally pause when you do background printing. This is because WordStar is sending information to your printer faster than your printer can print it.

To fix this, change the speed at which WordStar sends information to your printer to match the speed of your printer as follows:

1. At the Main Installation Menu, press **B** to see the Printer Menu.
2. Press **F** to see the Printer Interface Menu.
3. Press **D** to see the Background Printing Menu.
4. Press **B** to choose primary printer speed.
5. Type the cps (characters per second) for your printer and press ←┘. (Refer to your printer manual for this information.)
6. If you only have one printer, set the alternate printer speed to match the primary printer speed.
7. Press **X** three times to return to the Main Installation Menu.

Returning to Original Settings

You can return all the settings to the way they were when you first purchased this release of WordStar. Follow these steps:

1. At the Main Installation Menu, press **E** to see the Patching Menu.
2. Press **C** to choose reset all settings.
3. Press **Y** to confirm that you want to reset all settings.
4. Press **X** to return to the Main Installation Menu.

Leaving WSCHANGE

When you are done with an item, press **X** to go back one menu. When you are through making changes, press **^X** to leave WSCHANGE and save your changes. (If you just want to leave WSCHANGE without saving your changes, press **^C**.)

Patching WordStar

Making patches is a very technical procedure. Rather than answering questions and letting WSCHANGE make the changes for you, you will actually type in the hexadecimal codes yourself.

Because mistakes can have some far-reaching effects on WordStar, you may want to make a copy of the WS.EXE program before you begin. That way, if your patches don't work out as expected, you can go back to your original version.

The User Area

All the customizations to WS.EXE are made in a special area of the file called the "user area."

Note: To help you make changes, we've provided a readable copy of the user area in the PATCH.LST file. Before you begin making changes, print this file and determine what areas you want to change. Because this file has a large right margin, print it in a smaller font, or print it sideways on the page if your printer allows. Remember, the PATCH.LST file is just a readable copy of the user area; the actual user area is part of the WS.EXE program file.

The user area is made up of many small sections, each of which affects a certain part of the program such as the left margin or the function keys.

Many of these small sections are given labels, such as LGLDRV or HITE. Each label refers to a specific section in the user area. For example, the label LGLDRV refers to the legal disk drives section and the label HITE refers to the screen height section.

Note: User area labels that appear in lowercase letters in PATCH.LST are intermediate labels and cannot be used as patching locations in WSCHANGE.

Each of these sections contains data. Some sections have only one data item; some contain more than one. The label is associated with the first data item in the section.

In addition to labels for sections of the user area, each data item in the user area has its own address. These addresses are simply consecutive hex numbers for each piece of information. For example, the label INIDOC has a hex address of 0C44.

Note: While the address is based on the location of the data and can change if the data is moved between releases of WordStar, labels always refer to specific data and move with that data when it moves.

```
                ;
                ;When WordStar opens a file for editing, it uses the following
                ;initial conditions.
                ;
0C44 03         INIDOC  DB      3       ;Top of page margin.

0C45 08                 DB      8       ;Bottom of page margin.

0C46 42                 DB      66      ;Total lines per page.

0C47 0001               DW      1       ;Initial page number (note 2 bytes).

0C49 FF                 DB      TRUE    ;Page number prints at bottom of page
                                        ;if TRUE. No page number if FALSE.
```

As you look at the printout of the user area, you'll notice that it's a combination of program code and English words.

At the far left side is the **address** that indicates where in the user area the data appears. The addresses are in ascending order and appear on the listing as a hexadecimal number. If a line has more than one data item, the next address is incremented accordingly.

Immediately to the right of the address is the hex equivalent for the data stored there.

Sometimes a **label** is shown next. When you patch WordStar, you can specify either the label or the address. Because the label applies only to the first data item in a section, some data items don't have labels associated with them. You can refer to these data items by using labels such as INIDOC+1, INIDOC+2, etc.

The **DB** or **DW** shown on each line is the assembler directive that actually defines the data. DB stands for "define byte" and DW stands for "define word." For example, DB 3 means to define a byte that contains the number three. Similarly, DW 1 means to define a word that contains the number one.

A "word" is a data item with two bytes (16 bits) stored in two successive bytes, with the low-order byte first. For example, DW 12EFH means to store the hex word 12EF in the two bytes. The first byte contains EF and the next byte contains 12.

The data that follows a DB or DW can be one of four things:

- **A number**
- **TRUE or FALSE** TRUE is the same as hex FF; FALSE is the same as hex 00.

- **A string** A string is several characters whose ASCII codes are stored in successive bytes. Strings are shown in the user area listing surrounded by quotation marks. For example, the string 'ABC' is stored in three bytes as hex 41, 42, and 43 (the ASCII codes for A, B, and C, respectively).
- **Duplicated** If the word DUP follows a DB or DW, the value within parentheses is to be duplicated several times. For example, 10 DUP (0) means that the value zero is to be duplicated ten times.

The last thing on each line in the example above is a **comment** that begins with a semicolon and describes the data in plain English. In most cases, these comments provide the most technical and most detailed information about the data.

Using Patching Menus

To patch changes in the user area, choose one of the patching menus in WSCHANGE. You'll see a menu of items from that part of the user area. Select one of the items from the menu or press the equal sign (=) to go to any other location in the user area.

If you press =, you'll be prompted for an address or label from the user area. Since the address for information may change from one release of WordStar to another, it's best to signify location using labels. (You can also use label calculations such as LGLDRV+1.)

Once you specify what area to patch, WSCHANGE displays the address, the current value (in hex) for the 16 bytes beginning at that address, and their ASCII equivalents.

0575 02 00 41 03 02 11 10 02 00 42 04 11 13 0F 0F 02..A.....B.....

WSCHANGE always displays 16 bytes of information, regardless of the actual size of the data you're changing. If the data you are changing is only six bytes long, you'll see those six bytes plus ten bytes from the next data. The address at the left of the screen is for the first of the sixteen bytes displayed onscreen.

To the right of the address, the bytes are shown as hexadecimal numbers. Beyond those appear the ASCII equivalents for the bytes. (If the byte is not in the range of hex 20 to 7E, it is not a displayable character and appears as a dot.)

The cursor is positioned under the first digit of the first byte at the address shown. Change the byte above the cursor (or leave it unchanged) by typing any of the patch commands (these are also shown onscreen):

' (single quote)	To change the value of the digit-pair above the cursor to that of any other ASCII character, type a single quote (') and then the character, for example, 'A. WSCHANGE translates this into the proper ASCII code equivalent (in this case, hex 41).
0–9, A–F	To type a new hex value to replace the current value, type two digits. Each hex digit must be either a number or a letter between A and F.
. (period)	To redisplay the line showing any changes you've made, type a period.
↵	To leave the byte under the cursor unchanged and advance to the next byte, press ↵.
X	To save your changes and return to the menu, press **X**.
← (Backspace) or **^H**	Press ← (Backspace) or **^H** to correct typing errors.
^C	To cancel all your changes so far and return to the operating system, press **^C**.
^X	To quit WSCHANGE and save your changes, press **^X**.

After you change the 16th byte, the next 16 bytes are displayed. (You could actually go through the entire user area, 16 bytes at a time, but we don't recommend it.)

Entering Printer Control Information

If you use the patching menus to modify control sequences for your printers, keep these rules in mind:

- When typing hex codes for your printer strings, the first byte you type for each sequence is the length of the entire sequence. For example, if your sequence consists of the two characters Esc and 4, type:

  02 1B '4

  Note that '4 represents the ASCII equivalent for the number 4.

- If the sequence is too long (refer to the user area listing; usually 25 bytes is the limit), redirect the string to another patch area by typing **FF** as the length byte. Then type the address, low byte first, where the long string is actually located.

  For example, if you put the long string in the PRNPAT patch area at address 09B3, type the following as the control sequence:

  FF B3 09

  Then type the long control sequence at PRNPAT starting with the length byte.

Auto Patching

The auto patcher section of WSCHANGE lets you exchange some or all of your customizations with another WS.EXE file.

This is very useful if you get an upgrade of the program and want to customize it without rechoosing every item step by step, or if you want to trade customizations or printer settings with another WordStar Professional Release 4 owner.

Using the Auto Patcher

The auto patcher lets you specify which customizations you want to save and then writes the customizations to a nondocument file. You can then use WSCHANGE to read these customizations into the other copy of WordStar.

Saving Customizations

To save your customizations to an auto patcher file, follow these steps:

1 From the Main Installation Menu, press **E** to see the Patching Menu. (There are also choices in the function key and screen areas of WSCHANGE to save your function key and screen color settings.)

Note: To save customizations from your printer driver file (WSPRINT.OVR), you must go to the Printer Driver Library Menu and use the patch selection there.

2 Press **B** to choose Save Settings.

3 When prompted, type a filename where you'll save the customizations.

4 When prompted, save the entire user area or specify the location of the information you want to save.

You can specify either the address or the label. We strongly recommend that you specify the location by label whenever possible. This is especially important if you want to copy your customization to a new release of WordStar.

5 When prompted, press any key to return to the Patching Menu.

6 Press **X** to return to the Main Installation Menu.

Using Customizations

To read an auto patcher file into your copy of WordStar, follow these steps:

1 From the Main Installation Menu, press **E** to see the Patching Menu.

Note: To read changes into your printer driver file (WSPRINT.OVR), you must go to the Printer Driver Library Menu and use the patch selection there.

2 Press **A** to choose Auto Patcher.

3 When prompted, type the name of your auto patcher file and press ←┘.

4 Press any key to return to the Patching Menu.

5 Press **X** to return to the Main Installation Menu.

The Auto Patcher File

An auto patcher file is a nondocument file that lists the starting location for the customization information, then the information for that location. WSCHANGE creates this file for you.

If you want, you can use WordStar nondocument mode to edit an existing auto patcher file or to create one of your own.

Here is an example of an auto patcher file that patches the 20 bytes starting at the label INIDOC in the user area:

```
INIDOC=03,08,42,01,00,FF,1C,02,02,07
=08,FF,FF,00,0C,08,0C,0A,03,08
```

The label INIDOC followed by an equal sign (=) indicates where the patch starts. You can also use an address calculation such as INIDOC+5 or a hex address.

Note that the second line of the example begins with an equal sign rather than an address. This signifies that it is a continuation of the previous line. Since the auto patcher can only handle lines shorter than 128 characters, use this method to break up long patches. The hex values for each byte follow the equal signs.

Add strings to the file by surrounding them by either single or double quotes, for example:

```
INITID='Special test version',0D,0A,00
TRMINI=FF,ERASCR,ERASCR/100
```

WordStar evaluates the values between commas to the right of the equal sign as byte values. They are always evaluated modulo 256. However, all arithmetic is done with words (16-bit values), and all numbers are assumed to be hexadecimal.

You can use these operators in calculations:

+	add	/	divide
-	subtract	!	and
*	multiply	^	or

Calculations are evaluated strictly from left to right and cannot use parentheses.

Appendix D

Files on Your WordStar Disks

When you receive WordStar, it is on six floppy disks: the Installation disk, the Program disk, the Dictionary disk, the Tutor disk, and the two Word Finder disks. The contents of the disks are described below.

Note: Depending on your system configuration, you may receive a different number of disks and some of the files listed below may be on different disks.

Installation Disk

The Installation disk contains the files used for installation and customization. It also contains information on any features that were added or changed too recently to add to the manuals, including any files that were added, deleted, or moved between disks. As soon as you install WordStar, it's a good idea to look at this information. At the operating system prompt, type **readme** and press ←┘. The README program also includes information on how WordStar works with each supported printer.

The Installation disk contains the following files:

WINSTALL.EXE
WSCHANGE.EXE
WSCHANGE.OVR
PATCH.LST
README.COM
README.TXT
WS3KEYS.PAT
PRINT.TST

Program Disk

The Program disk contains the files you need to run WordStar and several sample files (the ones with the .DOC extension). The files on the Program disk are listed below:

WS.EXE
WSMSGS.OVR
WSPRINT.OVR
WSSPELL.OVR
WSSHORT.OVR
WSINDEX.XCL
WC.EXE
TEXT.DOC
RULER.DOC
TABLE.DOC
SAMPLE1.DOC
SAMPLE2.DOC
SAMPLE3.DOC
CHAPTER1.DOC
CHAPTER2.DOC
CHAPTER3.DOC
DIARY.DOC
LASER1.DOC
LASER2.DOC
BOX

Dictionary Disk

The Dictionary disk contains the dictionary files, which are used for checking spelling. The dictionary files are listed below:

INTERNAL.DCT
MAIN.DCT
PERSONAL.DCT

Tutor Disk

The Tutor disk contains the onscreen tutorial. The tutorial files are listed below:

TEACHME.EXE
QUICK.OVR
FEARNOT.OVR
WORDSTAR.OVR
INTRO.OVR
EXPLORE.OVR

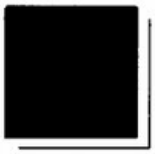
Word Finder Disks

The Word Finder thesaurus program is contained on two disks. The Word Finder 1 disk contains the following files:

WF.EXE
WFINSTAL.EXE
WFSCREEN.EXE
WFSM.SYN

The Word Finder 2 disk contains the following file:

WFBG.SYN



Appendix E

Making the Best Use of Directories and Memory

Your operating system offers many features that make WordStar run faster and more efficiently. Two of those features are described in this appendix: directories (for organizing your disk) and buffers (for getting better use of your computer's memory). (For more information on directories, paths, and buffers, see your DOS manual.)

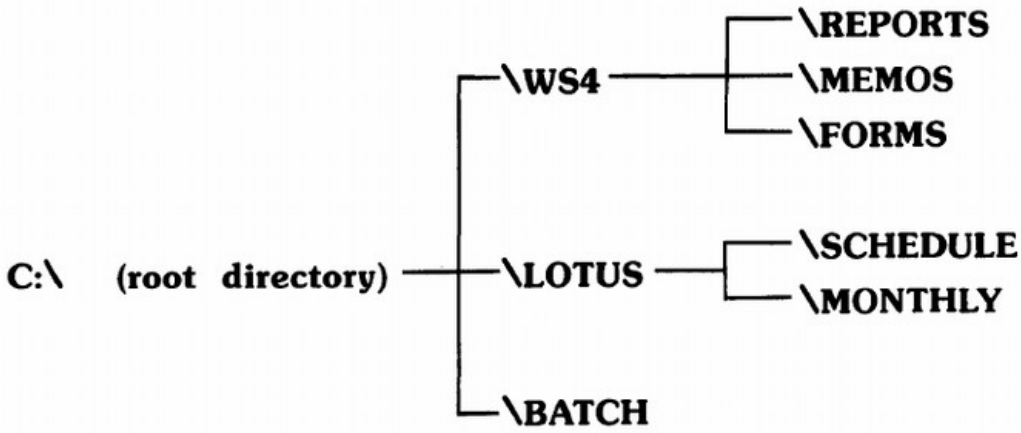
Directories

Creating Directories

On a computer, directories serve the same purpose as folders in a filing cabinet: they help you organize files.

On a disk, you create levels of organization by using directories within directories. The basic directory on a disk is the "root" directory.

In the following example, there are three directories off the root directory, and five more directories off them. Any of these directories can have files in them.



These directories form a structure referred to as a tree. The directories off the root directory form the branches of the tree.

The directories you go through from the root directory to a specific file is the *path* to that file. The path and the filename together form the *pathname* for the file. For example, the pathname for the BUDGET.JAN file in the REPORTS directory above is C:\WS4\REPORTS\BUDGET.JAN.

The next few pages will help you use directories with your WordStar files.

Organizing Your Files

To decide how to organize your WordStar files, think about how you most often group your files and the kinds of files you work with.

For example, if you share your computer with others, create one directory for each person. Or if you group your work according to subject or function, create directories for different types of files. The key is to design directories in a way that works best for you.

Here are some examples of ways to organize your files:

- by format (memos, year-end reports, guidelines, forms)
- by project (Colorado Power Plant, Taos Filtering Plant)
- by personnel (Tom, Claudia, Kim)
- by subject (Detroit Office, Sales, Parking)

Making Directories

Once you've decided how you want to organize your files, create directories by using the DOS MD command as follows:

At the system prompt, type **md** and the complete path to the directory you want to create. For example, to create the \REPORTS directory off the \WS4 directory, type **md \ws4\reports** and press ↵.

Note: You can only create one directory at a time, so the \WS4 directory must already exist before you can create the \WS4\REPORTS directory.

You can create many levels of directories, but remember that you'll sometimes type the complete pathname for a file, so you don't want the path to get too long. (The complete pathname for any file can't be more than 64 characters.)

Copying Files into the New Directories

Next you'll copy your existing files into the new directories.

> ***TIP*** *It's a good idea to make a copy of your files on a floppy disk before you continue below. You can use these backup copies if anything happens to the originals.*

To move files from other directories into your new directories, use the DOS COPY command as follows:

1. At the system prompt, type **copy *oldpathname newpathname*** and press ↵. You can copy one file at a time, or you can use the wild-card characters * and ? to copy groups of files.

   The ? stands for any character in this space in the filename, while * represents all the remaining characters. For example:

   - *.DOC copies all filenames with the extension .DOC.
   - T??? copies all filenames of four letters or less that start with the letter T.
   - T*.DOC copies all filenames that start with the letter T and have the extension .DOC.

2. Once you've copied a file into the new directory, remove it from the original location.

CAUTION *If you have a hard disk computer and you put any of the WordStar program files in a directory other than \WS4, you must use WSCHANGE to tell WordStar the new location for these files. See Appendix C, "Customizing WordStar," for information on changing the installed location for these files.*

Seeing a List of Your Directories

To see an onscreen list of all your directories, use the DOS TREE command as follows:

1. Log on to the drive or directory containing your DOS files.
2. Type **tree** from the system prompt and press ↵. You will see a list of every directory on your disk.

TIP *For a list that includes the filenames in each directory, type* ***tree/f*** *and press ↵. See your DOS manual for more information on the TREE command.*

Changing the Prompt Display

Once you've created directories, it's important to know what directory you're working in. The line above the file listing at the WordStar Opening Menu tells you what directory you are in.

When you're not running WordStar, you can have your computer display the current path and directory in the system prompt. For example, when you're in the \WS4 directory, the system prompt will look like this:

```
C:\WS4>
```

This way, you will always know what directory you are in. (The computer normally displays just the drive letter, for example, C>, no matter what directory you're in.)

To have the system prompt display the directory, follow these steps:

1. Press **N** at the WordStar Opening Menu to edit a nondocument file.
2. When prompted for the filename, type **\autoexec.bat** and press ↵. (Be sure to type the backslash before the name. This edits the AUTOEXEC.BAT file in your root directory.) If you don't already have an AUTOEXEC.BAT file, WordStar will create one.
3. Add this line to the file:

   prompt pg

4. Press **^KX** to save the file and exit WordStar.

5 Press **Ctrl**, **Alt**, and **Del** simultaneously to reboot your computer.

Every time you start your computer, it reads the AUTOEXEC.BAT file in your root directory. This line in the file tells your computer to display the directory in the prompt.

For more information on the DOS MD, COPY, TREE, and PROMPT commands, see your DOS manual.

Using Directories with WordStar

The WordStar Opening Menu lists filenames in the current directory and the names of any directories off the current directory. The list does not include the names of files in any other directories.

The names of directories off the current directory are listed at the beginning of the filename display with a backslash before their name, for example, \REPORTS.

To change or *log on* to another directory, press **L** at the WordStar Opening Menu. Then choose a directory name and press ↵. The filenames in this new directory will be displayed.

Editing Files in Other Directories

To edit a file in another directory, you have two options:

- Press **L** and log on to the new directory. When you see the list of all the files in the new directory, press **D** to edit a file and choose the file you want to edit.

  When you leave this file, you will stay in the new directory.

- Stay in the original directory, and press **D** to edit file. Then type the complete pathname to the file, for example, **\ws4\forms\filename**.

  Because you are still logged on to the original directory, when you leave the file, you will return to the original directory.

Both ways work equally well. Change directories when you want to see lists of files in other directories.

Shortcuts for Moving Around Directories

Here are two shortcuts for moving around in your directories. These shortcuts work whenever you change directories or type a filename:

- **Going to the Root Directory** After you press **L** to change directories, type \ (backslash) and press ↵ to go to the root directory.

  To start a path at the root directory, type a backslash at the beginning of the pathname. For example, no matter what directory you are in, type \WS4 to go to the \WS4 directory off the root directory. If you don't start with a backslash, WordStar looks for a WS4 directory off the current directory.

- **Going Back One Directory Level** After you press **L** to change directories, type .. (two periods) and press ↵ to go back one directory level from your current level.

Managing Files

Removing Old Files

To avoid accumulating too many files on your disk, look through your directories occasionally and erase files you no longer need.

Copy old files onto floppy disks for storage and erase these files from your hard disk. Remember to erase the backup files (.BAK) for these old files as well. Store different types of files on separate disks, then label the disks clearly so you can easily locate your documents.

Backing Up Directories

It's a good idea to make copies of important files and keep them on separate disks from the originals. If anything ever happens to the original, you can use these backup copies to recreate the file.

If you keep your directories small, you can copy all the files from a directory onto one floppy disk for safekeeping.

To copy an entire directory, follow these steps:

1 Put a formatted floppy disk in drive A and log on to the directory you want to copy.

2 From the system prompt, type **copy *.* a:** and press ↵.

All of the files in this directory will be copied onto the floppy disk.

TIP *You can also use WordStar to copy files.*

Using Your Computer's Memory

When you're running WordStar, your computer uses memory buffers to store information it will need later. If it can't store the information in a buffer, it must store it on your disk. This slows the computer down.

If your computer has extra free memory, you can increase the operating speed of WordStar by creating more buffers.

Checking Your Computer's Free Memory

Before you change the number of buffers, check the amount of free memory you have. Follow these steps:

1. If you use any memory resident programs such as TopView or Word Finder, make sure these are in memory before you check the amount of remaining memory.
2. Start WordStar.
3. Press **R** to run a DOS command.
4. Type the complete path to your DOS files, then type **chkdsk** and press ←┘. The screen will display information about your computer. The bottom line of the display shows you how much free memory your computer has.
5. Decide if you want to use any of this free memory for buffers. Each buffer takes 528 bytes of memory from RAM.
6. Press any key to return to WordStar.

Changing the Number of Buffers

You set the number of buffers in the CONFIG.SYS file. Use WordStar to edit this file.

- If the file contains a BUFFERS= statement, delete the old number and type the new number you have decided to use.

  Note: If you change to a *smaller* number of buffers, be sure no other program needs the extra buffers.

- If the file does not have a BUFFERS= statement, add the line BUFFERS= and the number of buffers you want, for example, **BUFFERS=20**.

After you change and save the CONFIG.SYS file, press **Ctrl**, **Alt**, and **Del** simultaneously to reboot your computer.

Appendix F

ASCII Character Codes and Extended Character Set

This chart shows decimal, hexadecimal, and ASCII values for all characters. The characters with decimal values above 127 are the extended character set.

Dec	Hex	CHR	Dec	Hex	CHR	Dec	Hex	CHR
000	00	NUL	024	18	CAN	048	30	0
001	01	SOH	025	19	EM	049	31	1
002	02	STX	026	1A	SUB	050	32	2
003	03	ETX	027	1B	ESCAPE	051	33	3
004	04	EOT	028	1C	FS	052	34	4
005	05	ENQ	029	1D	GS	053	35	5
006	06	ACK	030	1E	RS	054	36	6
007	07	BEL	031	1F	US	055	37	7
008	08	BS	032	20	SPACE	056	38	8
009	09	HT	033	21	!	057	39	9
010	0A	LF	034	22	"	058	3A	:
011	0B	VT	035	23	#	059	3B	;
012	0C	FF	036	24	$	060	3C	<
013	0D	CR	037	25	%	061	3D	=
014	0E	SO	038	26	&	062	3E	>
015	0F	SI	039	27	'	063	3F	?
016	10	DLE	040	28	(	064	40	@
017	11	DC1	041	29	)	065	41	A
018	12	DC2	042	2A	*	066	42	B
019	13	DC3	043	2B	+	067	43	C
020	14	DC4	044	2C	,	068	44	D
021	15	NAK	045	2D	-	069	45	E
022	16	SYN	046	2E	.	070	46	F
023	17	ETB	047	2F	/	071	47	G

Dec	Hex	CHR	Dec	Hex	CHR	Dec	Hex	CHR
072	48	H	134	86	å	196	C4	─
073	49	I	135	87	ç	197	C5	┼
074	4A	J	136	88	ê	198	C6	╞
075	4B	K	137	89	ë	199	C7	╟
076	4C	L	138	8A	è	200	C8	╚
077	4D	M	139	8B	ï	201	C9	╔
078	4E	N	140	8C	î	202	CA	╩
079	4F	O	141	8D	ì	203	CB	╦
080	50	P	142	8E	Ä	204	CC	╠
081	51	Q	143	8F	Å	205	CD	═
082	52	R	144	90	É	206	CE	╬
083	53	S	145	91	æ	207	CF	╧
084	54	T	146	92	Æ	208	D0	╨
085	55	U	147	93	ô	209	D1	╤
086	56	V	148	94	ö	210	D2	╥
087	57	W	149	95	ò	211	D3	╙
088	58	X	150	96	û	212	D4	╘
089	59	Y	151	97	ù	213	D5	╒
090	5A	Z	152	98	ÿ	214	D6	╓
091	5B	[	153	99	Ö	215	D7	╫
092	5C	\	154	9A	Ü	216	D8	╪
093	5D	]	155	9B	¢	217	D9	┘
094	5E	^	156	9C	£	218	DA	┌
095	5F	_	157	9D	¥	219	DB	▉
096	60	`	158	9E	Pt	220	DC	▄
097	61	a	159	9F	ƒ	221	DD	▌
098	62	b	160	A0	á	222	DE	▐
099	63	c	161	A1	í	223	DF	▀
100	64	d	162	A2	ó	224	E0	α
101	65	e	163	A3	ú	225	E1	ß
102	66	f	164	A4	ñ	226	E2	Γ
103	67	g	165	A5	Ñ	227	E3	π
104	68	h	166	A6	ª	228	E4	Σ
105	69	i	167	A7	º	229	E5	σ
106	6A	j	168	A8	¿	230	E6	µ
107	6B	k	169	A9	⌐	231	E7	τ
108	6C	l	170	AA	¬	232	E8	Φ
109	6D	m	171	AB	½	233	E9	Θ
110	6E	n	172	AC	¼	234	EA	Ω
111	6F	o	173	AD	¡	235	EB	δ
112	70	p	174	AE	«	236	EC	∞
113	71	q	175	AF	»	237	ED	∅
114	72	r	176	B0	░	238	EE	∈
115	73	s	177	B1	▒	239	EF	∩
116	74	t	178	B2	▓	240	F0	≡
117	75	u	179	B3	│	241	F1	±
118	76	v	180	B4	┤	242	F2	≥
119	77	w	181	B5	╡	243	F3	≤
120	78	x	182	B6	╢	244	F4	⌠
121	79	y	183	B7	╖	245	F5	⌡
122	7A	z	184	B8	╕	246	F6	÷
123	7B	{	185	B9	╣	247	F7	≈
124	7C	|	186	BA	║	248	F8	°
125	7D	}	187	BB	╗	249	F9	∙
126	7E	~	188	BC	╝	250	FA	·
127	7F	DEL	189	BD	╜	251	FB	√
128	80	Ç	190	BE	╛	252	FC	n
129	81	ü	191	BF	┐	253	FD	²
130	82	é	192	C0	└	254	FE	■
131	83	â	193	C1	┴	255	FF	blank
132	84	ä	194	C2	┬			'FF'
133	85	à	195	C3	├			

Appendix G

Command Summary

Commands from the System Prompt

Command	Description
ws	Starts WordStar and goes to the Opening Menu. See *Starting WordStar*.
ws *filename*	Starts WordStar and automatically opens the file *filename*. The file is opened in document mode unless the default has been changed to nondocument. See *Starting WordStar*.
ws *filename* n	Starts WordStar and automatically opens the file *filename* in nondocument mode. See *Starting WordStar*.
ws *filename* d	Starts WordStar and automatically opens the file *filename* in document mode. See *Starting WordStar*.
ws *filename* p	Starts WordStar and automatically prints the file *filename*. See *Starting WordStar*.

Command	Description
ws *filename* px	Starts WordStar, automatically prints the file *filename*, and exits to DOS. See *Starting WordStar.*

Commands from the Opening Menu

Command	Description
?	Displays current WordStar memory usage and serial number. See *Memory usage.*
C	Protects a file or removes protection. See *Protecting a file.*
D	Opens a document file. No distinction is made between uppercase and lowercase letters in filenames. Directory does not display files with the extensions .COM, .EXE, .OVR, or .$?$. See *Documents and nondocuments.*
E	Renames a file. See *Renaming a file.*
Esc	Goes to the Shorthand Menu. You can press **?** to display the shorthand definitions screen, which allows you to add, change, and delete shorthand characters. See *Shorthand.*
F	Turns the file directory display on/off (default: on). When you press F to turn the display on, you can control which filenames are displayed using file specifications that include the **?** and * wild cards. See *Directories.*
I	Creates an index of a file. See *Indexing.*
J	Displays help for the Opening Menu commands. You can press J again to change the help level. See *Help messages.*
L	Changes the logged disk drive or directory to any on your system. When you insert a new floppy disk in the logged drive, be sure to log on to that drive again to update the file directory display. See *Logged drive and directory.*
M	Merge prints a file. If merge printing is already in progress, displays the Printing screen. See *Merge printing.*
N	Opens a nondocument (ASCII) file. See *Documents and nondocuments.*

O	Copies a file. See *Copying.*
P	Prints a file. If printing is already in progress, displays the Printing screen. See *Printing a file.*
R	Runs another program or command and returns to WordStar. See *Running a DOS command.*
T	Creates a table of contents for a file. See *Table of contents.*
X	Exits to the operating system. If printing is in progress, displays the Printing screen. See *Exiting.*
Y	Deletes a file. See *Deleting text.*

Commands from the Edit Menu

Command	Description
^6	In document mode, converts a hard carriage return to a soft one. See *Soft spaces and carriage returns.* In nondocument mode, turns auto indent on and off. (Default: off) See *Auto indent.* Use the 6 key above the alphabetical keys, not the 6 on the numeric keypad.
^A	Moves the cursor left one word to the first character of the previous word. See *Cursor movement and scrolling.*
^B	In documents, aligns the paragraph (from the cursor location or the current left margin, whichever is further left) between the current margins including temporary margins set with ^OG. Aligning stops at the first hard return. If hyphen help is on, ^B continues aligning the paragraph without hyphenating the word. See *Aligning a paragraph.* In nondocuments, removes the high-order bits from the line. See *Documents and nondocuments.*
^C *or* **Pg Dn**	Scrolls down one screen. The cursor moves down one screen and the screen display scrolls. See *Scrolling.*
^D *or* →	Moves the cursor one character to the right. See *Cursor movement and scrolling.*
^E *or* ↑	Moves the cursor up one line. See *Cursor movement and scrolling.*

Command	Description
Esc	Goes to the Shorthand Menu. Press the key for a shorthand character to insert the character's definition into the text, or press the key for one of the following commands: **?** Displays the shorthand definitions screen, which allows you to examine, add, or change shorthand characters. **^J** Displays help for shorthand. **=** Inserts the result of the last math operation. **$** Inserts the last math result formatted as a dollar amount. **#** Inserts the last math equation. **@** Inserts today's date. **!** Inserts the current time. See *Shorthand.*
^F	Moves the cursor right one word to the first character in the next word. See *Cursor movement and scrolling.*
^G *or* **Del**	Deletes the character at the cursor position. At the end of a line, deletes the hard or soft return. See *Deleting text.*
^H *or* ←	Deletes the character to the left of the cursor. At the beginning of a line, deletes the previous hard or soft return. See *Deleting text.*
^I *or* **Tab**	Moves the cursor to the next regular or decimal tab stop. With Insert on, inserts spaces and moves existing text to the next tab stop. With Insert off, moves the cursor past existing text to the next tab stop. If the current line has no more tabs, has no effect. See *Tab stops.*
^J	Enters the help system. Press any command to see help for that command. See *Help messages.*
^J?	Displays help with screen layout. See *Help messages.*
^J.	Displays help with dot commands. See *Help messages.*
^J^J	Changes the help level. **3** All menus and prompts are displayed. **2** The Edit Menu is not displayed; submenus and prompts are displayed. **1** No menus are displayed; some prompts are displayed. **0** No menus are displayed; some prompts are displayed; the status line is not displayed. See *Help levels.*

^K Goes to the Block & Save Menu.
See *Block & Save Menu.*

^K' Converts all uppercase characters in a marked block to lowercase.
See *Case conversion.*

^K" Converts all lowercase characters in a marked block to uppercase.
See *Case conversion.*

^K *0–9* Sets a nonprinting marker at the current cursor position.
Use ^Q 0–9 to go to the marker.
Place markers do not move with blocks.
Place markers are not saved after you exit the file.
See *Place markers.*

^KB Marks the beginning of a block of text with <B>.
See *Blocks.*

^KC Copies a marked block to the cursor position.
Original block is unchanged and is still marked.
See *Blocks.*

^KD Saves the current file and exits to the Opening Menu.
See *Saving a file.*

^KE Renames a file.
See *Renaming a file.*

^KF Displays the DOS prompt. You can run a DOS command or program, then resume editing.
See *Running a DOS command.*

^KH Turns the highlighting of a marked block and the display of place markers on/off.
You cannot perform block operations if block display is off.
See *Blocks.*

^KI Turns column replace on/off. Works only in column mode.
If on, **ColRepl** is displayed in the status line.
See *Column blocks.*

^KJ Deletes a file (except the current file or a protected file).
See *Deleting text.*

^KK Marks the end of a block of text with <K>.
See *Blocks.*

^KL Changes the logged disk drive or directory.
See *Logged drive and directory.*

^KM Totals the numbers in a marked block.
A number enclosed in parentheses or preceded by a hyphen is subtracted.
See *Block math.*

Command	Description
^KN	Turns column mode on/off. If on, **Column** is displayed in the status line. With column mode on, the left and right edges of a block are determined vertically by the block beginning <B> and block ending <K> markers, respectively. Hard returns do not move with a column block. Dot commands are not included in a column block. (Default: off) See *Column blocks*.
^KO	Copies a file. See *Copying*.
^KP	Starts printing or merge printing. If printing is already in progress, displays the Printing screen. See *Printing a file*.
^KQ	Abandons the file without saving your work from the current editing session and returns you to the Opening Menu. See *Saving a file*.
^KR	Copies another file to the cursor position in the current file. Existing text moves down, except in column replace mode. See *Blocks*.
^KS	Saves your work and remains in the current file. See *Saving a file*.
^KV	Moves a marked block to the cursor position. Does not move any place markers set in the block. See *Blocks*.
^KW	Writes a marked block to a separate file. See *Blocks*.
^KX	Saves the current file and exits to the operating system. See *Saving a file*.
^KY	Deletes a marked block. See *Blocks*.
^L	Repeats the last find or find-and-replace operation. See *Finding and replacing*.
^M	Inserts a hard carriage return. If Insert is off, moves the cursor to the beginning of the next line without inserting a return. See *Enter key*.
^N	Inserts a blank line. Leaves the cursor where it is and moves any text to the right of the cursor down one line. See *Blank lines*.

^O Goes to the Onscreen Format Menu (for document files only).
See *Onscreen Format Menu.*
Sets the fixed tab interval in nondocuments.
See *Tab stops.*

^OB Turns display of the soft space characters on and off.
(Default: off)
See *Soft spaces and carriage returns.*

^OC Centers the text on the current line between the current margins.
See *Centering text.*

^OD Turns the display of print controls on/off.
(Default: on)
See *Previewing.*

^OE Inserts a soft hyphen.
A soft hyphen is displayed as an equal sign (=) when it is not at the end of the line.
See *Hyphenation.*

^OF Sets the ruler line from the format of the text line or typed ruler line that the cursor is in.
See *Ruler lines.*

^OG Sets a temporary left margin one tab stop to the right of the previous left margin.
Can be used more than once to move the left margin more tab stops to the right.
The temporary margin remains in effect until you press ↵.
^B aligns text using the temporary margin, then turns the temporary margin off.
See *Indenting.*

^OH Turns hyphen help on/off.
With hyphen help on, when aligning text, the cursor stops at each word that is at the end of a line and that can be hyphenated. Press the hyphen key (-) to hyphenate at the cursor, or use the cursor keys to move the cursor, then press the hyphen key to hyphenate at the new cursor location. Press ^B to move the entire word to the next line without hyphenating.
These hyphens are "soft." If text is realigned, they print only when they fall at the end of a line.
(Default: off)
See *Hyphenation.*

^OI Sets tab stops.
Type the column number of the tab or press **Esc** to use the current cursor column.
To set a decimal tab stop, press # before typing the column number or pressing **Esc**.
See *Tab stops.*

Command	Description
^OJ	Turns justification on/off. If on, WordStar inserts "soft" spaces between words so all wrapped lines line up at the right margin. (Default: on) See *Justification*.
^OL	Sets the left margin. Type the column number of the margin or press **Esc** to use the current cursor column. (Default: column 1) See *Margins*.
^ON	Clears tab stops. Type the column number of the tab to delete, press **Esc** to delete the tab at the cursor column, or press **A** to delete all tabs. To clear a decimal tab, press **#** before typing the column number or pressing **Esc**. See *Tab stops*.
^OO	Embeds the current ruler line by creating a .RR command line at the cursor location. The cursor should be in column 1 so the .RR starts in column 1. See *Ruler lines*.
^OP	Turns previewing on/off. When previewing is on, the display of print controls and dot commands is off and the file is protected from changes. (Default: off) See *Previewing*.
^OR	Sets the right margin. Type the column number of the margin or press **Esc** to use the current cursor column. (Default: column 65) See *Margins*.
^OS *n*	Sets the spacing between lines. *n* is a number from 1–9; 2 is double spaced, 3 is triple spaced, and so on. If other than 1, Spacing–*n* appears in the status line. Each time you press ←┘, *n* returns are entered. ^N always enters only 1 hard return. (Default: 1 — single spaced) See *Line spacing*.
^OT	Turns the display of the ruler line on/off. (Default: on) See *Ruler lines*.
^OW	Turns word wrap on/off. (Default: on) See *Word wrap*.

^OX Temporarily releases the left and right margins.
Return to the current margins by pressing ^OX again or by moving the cursor to inside the current margins.
See *Margins*.

^P Goes to the Print Controls Menu.
See *Print Controls Menu*.

^P ↵ Causes the next line to print over the current line.
See *Overprinting*.

^P@ Forces printing of the rest of the line to start at a fixed position.
The position is based on the character width of normal pitch.
Used with columnar text that contains pitch or character width changes or that is proportionally spaced.
Use ^P@ on each line before the first character in the column.
See *Columns* and *Proportional spacing*.

^PA Changes to alternate pitch.
The default alternate pitch uses the character width of 12 characters per inch (elite). You can use .CW to change character width.
Use ^PN to change back to normal pitch.
See *Pitch*.

^PB Boldfaces subsequent text until used again.
See *Boldface*.

^PC Stops printing at this spot in the text until you press C or P at the Printing screen.
See *Pause printing*.

^PD Double strikes subsequent text until used again.
See *Double strike*.

^PE Controls a user-defined special print feature not controlled by the other print control commands.
Define this command using WSCHANGE or the .XE dot command.
See *Custom print controls*.

^PF Prints a special character not available on the keyboard (phantom space).
See *Phantom space and rubout*.

^PG Prints a special character not available on the keyboard (phantom rubout).
See *Phantom space and rubout*.

^PH Causes the next character to print on top of the previous character.
See *Overprinting*.

^PI Inserts a nondocument "fixed" tab.
The default fixed tab is eight characters wide.
See *Tab stops*.

^PJ Inserts a line feed.
See *Line feeds*.

Command	Description
^PK	Marks the beginning and end of a word or phrase to be indexed. You cannot index text in headers, footers, or other dot commands. To create the index, use I at the Opening Menu. See *Indexing.*
^PK	In headers and footers, tells WordStar to ignore the spaces between the dot command and the header or footer text on even-numbered pages. (Causes text or page numbers to alternate position on odd and even pages.) See *Footers and headers.*
^PL	Inserts a form feed (the printer goes to the next sheet of paper). The footer or page number is not printed. See *Form feeds.*
^PN	Changes to normal pitch. The default normal pitch uses the character width of 10 characters per inch (pica). You can use .CW to change character width. Use ^PA to change to alternate pitch. See *Pitch.*
^PO	Inserts a binding space between two characters, preventing word wrap or paragraph aligning from separating two words. See *Binding space.*
^PQ	Controls a user-defined special print feature not controlled by the other print control commands. Define this command using . XQ or WSCHANGE. See *Custom print controls.*
^PR	Controls a user-defined special print feature not controlled by the other print control commands. Define this command using .XR or WSCHANGE. See *Custom print controls.*
^PS	Underlines subsequent text until used again. See *Underlining.*
^PT	Superscripts subsequent characters until used again. Superscripted characters are printed a fractional line above other text (if printer allows). See *Subscript and superscript.*
^PV	Subscripts subsequent characters until used again. Subscripted characters are printed a fractional line below other text (if printer allows). See *Subscript and superscript*
^PW	Controls a user-defined special print feature not controlled by the other print control commands. Define this command using .XW or WSCHANGE. See *Custom print controls.*

^PX Prints hyphens (—) over subsequent characters (except spaces) until used again.
See *Strikeout.*

^PY Prints subsequent text in italics or using the alternate ribbon color (depending on the printer) until used again.
See *Color* and *Italics.*

^PrtSc Saves the file, then displays the print options screen to print the file.
See *Saving a file.*

^Q Goes to the Quick Menu.
See *Quick Menu.*

^Q? Displays the character count from the beginning of the file to the cursor position.
See *Quick Menu.*

^Q *0–9* Moves the cursor to a previously marked place. (Use with ^K *0–9.*)
See *Place markers.*

^Q Del Deletes all the characters from the cursor position to the left side of the current line.
The rest of the line moves to the left margin.
See *Deleting text.*

^QA Finds one string of text and replaces it with another.
Strings can be up to 65 characters long.
Unless a global option is used, one occurrence of the string is found.
To find the next occurrence, use ^L.
As many options can be used as wanted. The options are:

- **W** Searches for whole words only.
- **U** Ignores the case (upper or lower) of characters.
- **B** Searches backward from cursor position.
- **?** Treats **?** in the find string as a wild card.
- ***n*** Finds and replaces *n* occurrences of the string.
- **G** Searches globally, starting at the beginning of the file (or the end of the file if B is also used).
- **R** Searches globally, starting at the current cursor position.
- **N** Replaces without asking.
- **A** Aligns the paragraph after each replacement.

See *Finding and replacing.*

^QB Moves the cursor to the beginning block marker, if set.
See *Finding your place.*

^QC Moves the cursor to the end of the file.
See *Cursor movement and scrolling.*

^QD Moves the cursor to the right end of the current line.
See *Cursor movement and scrolling.*

Command	Description
^QE	Moves the cursor to the top of the screen. The cursor moves to the left end of the first line. Text does not move. See *Cursor movement and scrolling.*
^QF	Finds a specified string of text. The string can be up to 65 characters long. One occurrence of the string is found. To find the next occurrence, use ^L. As many options can be used as wanted. The options are: **W** Searches for whole words only. **U** Ignores the case (upper or lower) of characters. **B** Searches backward from cursor position. **?** Treats **?** in the find string as a wild card. ***n*** Finds the *n*th occurrence of the string. **G** Moves to the beginning of the file before searching (or the end of the file if B is also used). See *Finding and replacing.*
^QG	Moves the cursor to the next occurrence of a character. You type the character to find. See *Finding your place.*
^QH	Moves the cursor to the previous occurrence of a character. You type the character to find. See *Finding your place.*
^QI	Moves the cursor to the page you specify. In nondocuments, moves the cursor to the line you specify. See *Finding your place.*
^QK	Moves the cursor to the end block marker, if set. See *Finding your place.*
^QL	Checks the spelling of all the words in the rest of the document. Does not check spelling in dot command lines. See *Spelling check.*
^QM	Displays the Math Menu, then solves the equation you enter. See *Calculator.*
^QN	Checks the spelling of the word at the cursor. See *Spelling check.*
^QO	Checks the spelling of a word that you enter. See *Spelling check.*
^QP	Returns the cursor to its position before the last command. Must be used immediately after using the command. See *Finding your place.*

^QQ Repeats the next letter or command continuously until stopped. Control the speed by typing 0–9 after the command. 0 is fastest, 9 is slowest. (Default: 3)
Press any key to stop the repetition.
See *Repeating.*

^QR Moves the cursor to the beginning of the file.
See *Scrolling.*

^QS Moves the cursor to column 1 of the current line.
See *Cursor movement and scrolling.*

^QT Deletes all characters up to the next occurrence of a character you specify.
See *Deleting text.*

^QU In documents, aligns the rest of the paragraphs in the file.
See *Aligning a paragraph.*
In nondocuments, removes the high-order bits from the rest of the file.
See *Documents and nondocuments.*

^QV Moves the cursor to the previous block or find position (the position of the beginning block marker or the position of the last find string found).
See *Finding your place.*

^QW Scrolls up, moving the screen display up continuously. Control the speed by typing 0–9 after the command. 0 is fastest, 9 is slowest. (Default: 3)
Press any key to stop the scrolling.
See *Scrolling.*

^QX Moves the cursor to the bottom of the screen.
The cursor moves to the right end of the last line. Text does not move.
See *Cursor movement and scrolling.*

^QY Deletes all characters from the cursor position to the right end of the current line.
Does not delete carriage returns.
See *Deleting text.*

^QZ Scrolls down, moving the screen display down continuously. Control the speed by typing 0–9 after the command. 0 is fastest, 9 is slowest. (Default: 3)
Press any key to stop the scrolling.
See *Scrolling.*

^R *or* **Pg Up** Scrolls up one screen. The cursor moves up one screen and the screen display scrolls.
See *Scrolling.*

^S *or* ← Moves the cursor one character to the left.
See *Cursor movement and scrolling.*

Command	Description
^T	Deletes a word, starting at the cursor position and ending at the next space or any of these punctuation marks: . , : ; ! or ?. At the end of a line, deletes a hard or soft return or a ^P ↵ command. See *Deleting text.*
^U	Restores (unerases) the most recently deleted text, except single characters deleted with ^H, ^G, Del, or ←. Interrupts a command in progress. See *Undo and unerase.*
^V *or* **Ins**	Turns Insert on/off. If on, **Insert** is displayed in the status line. (Default: on) See *Inserting.*
^W	Scrolls up one line. The screen display moves down one line. The cursor moves with the text. See *Scrolling.*
^X *or* ↓	Moves the cursor down one line. The cursor stays in the same column until it reaches a shorter line. See *Cursor movement and scrolling.*
^Y	Deletes the current line including any hard or soft return or over-printed line. See *Deleting text.*
^Z	Scrolls down one line. The screen display moves up one line. The cursor moves with the text. See *Scrolling.*

Dot Commands

Command	Description
.. *text*	Identifies this line of text as an onscreen comment line only, not to be printed. See *Comment lines.*
.AV *name or* .AV *"text",name*	Asks at print time for variable data for merge printing. The variable *name* in your text is replaced with data you supply at print time. Don't use ampersands around the variable name in the .AV command. The variable name can be up to 39 characters long, can include letters, numbers, and punctuation marks except commas. The text is optional. If present, it is displayed as a prompt for the variable. See *Merge printing.*

.AW on/off Turns aligning and word wrap on and off.
If on, **Align** is displayed in the status line.
(Default: on)
See *Aligning a paragraph* and *Word wrap*.

.BN *n* Selects the number (*n*) of the sheet feeder bin to use.
Number must be 0 to 4. 0 disables sheet feeder. 1–4 are bins.
The command must be before the first line of text on the first page affected.
Control strings for bins must be installed using WSCHANGE.
See *Sheet feeders*.

.BP on/off Turns bidirectional printing on and off for certain printers.
When off, all lines are printed from left to right.
When on, alternate lines are printed from right to left.
(Default: on)
See *Bidirectional printers*.

.CP *n* Inserts a conditional page break to keep the next *n* lines together on one page.
If they do not all fit on the current page, the page break occurs at the .CP command.
See *Page breaks*.

.CS *message* Clears the screen during printing and displays message.
The message is optional and can include variable names.
See *Messages while printing*.

.CW *n* Sets the character width to $^{n}/_{120}$ inch where *n* can be any number from 1 to 255.
Affects either normal or alternate pitch, whichever is in effect when the command is entered.
If the printer does not support the width, the printer driver uses the closest available width.
(Default: $^{12}/_{120}$ inch, 10 characters per inch)
See *Character width*.

.DF *datafile* Defines the data file. Names the data file to use for merge printing the document.
Include a drive letter or directory path with the filename if needed.
If the data file uses a data separator character other than the comma, type a comma and the character after the filename.
If you need to change disks while printing, type C or CHANGE after the data filename. At print time, WordStar will prompt you to change disks.
You can use only one .DF command in each master document.
See *Merge printing*.

.DM *message* Displays a message on the screen during printing.
The message can include variable names.
You can use an unlimited number of .DM commands. Each message appears on the screen on a separate line.
See *Messages while printing*.

Command	Description
.EI	Shows the end of an IF condition (END IF). One .EI must be present for each .IF in the file. See *Merge printing conditional commands.*
.EL	Begins a conditional alternative (ELSE). If the .IF condition is not true, prints the following text and carries out the following commands until the next .EI. Must be after .IF and before .EI. One .EL can be used with each .IF. See *Merge printing conditional commands.*
.FI *filename*	Prints the named file at this position in the current file. Include a drive letter or directory path with the filename if needed. If you need to change disks while printing, type C or CHANGE after the filename. You can chain (one file after another) as many files as you want. You can nest (insert) an unlimited number of files inside one file. You can nest one file inside another up to 8 layers. See *Nesting and chaining.*
.FM *n*	Sets the number of blank lines between the last line of the text and the first footer line. Takes effect on the same page. The footer margin plus the number of footer lines must be equal to or less than the bottom margin. (Default: 2 lines) See *Margins.*
.FO *text* or .F1 *text*	Prints *text* as footer on every page until .FO or .F1 is used again without text or with new text. The # character in the text is replaced with the page number. Takes effect on the same page. These two commands are interchangeable. (Default: the footer is a page number in column 28.) See *Footers and headers.*
.F2 *text*	Prints *text* as the second footer line on every page until .F2 is used again without text or with new text. Use .F2 and press the Spacebar twice to insert a blank line in the footer between .F1 and .F3. Takes effect on the same page. See *Footers and headers.*
.F3 *text*	Prints *text* as the third footer line on every page until .F3 is used again without text or with new text. Takes effect on the same page. See *Footers and headers.*
.GO top/bottom	Causes printing to skip to the beginning or the end of the file. **t** is the same as top; **b** is the same as bottom. See *Merge printing conditional commands.*

.HE *text or*
.H1 *text*

Prints *text* as the header on every page until .HE or .H1 is used again without text or with new text. The # character in the text is replaced with the page number.
Takes effect on the same page if the command is in line 1; otherwise, takes effect on the next page.
These two commands are interchangeable.
(Default: no header)
See *Footers and headers.*

.H2 *text*

Prints *text* as the second header line on every page until .H2 is used again without text or with new text.
Use .H2 and press the Spacebar twice to insert a blank line in the header between .H1 and .H3.
Takes effect on the same page if the command is before the first text line on the page; otherwise, takes effect on the next page.
See *Footers and headers.*

.H3 *text*

Prints *text* as the third header line on every page until .H3 is used again without text or with new text.
Takes effect on the same page if the command is before the first text line on the page; otherwise, takes effect on the next page.
See *Footers and headers.*

.HM *n*

Sets the number of blank lines between the last header line and the first line of the text area.
Takes effect on the same page if the command is in line 1; otherwise, takes effect on the next page.
The header margin plus the number of header lines must be equal to or less than the top margin.
(Default: 2 lines)
See *Margins.*

.IF *condition*

If the condition is true, prints the following text and carries out the following commands until the next .EI.
The condition can include variables, constants, and an operator. Operators are =, <, >, <>, <=, and >= for alphabetical comparisons and #=, #<, #>, #<>, #<=, and #>= for numerical comparisons.
If the condition is just a variable name, it is considered true if the variable data is not 0 and not blank.
You can use .IF more than once to indicate complex conditions.
Each .IF must have a corresponding .EI.
See *Merge printing conditional commands.*

.IG *text*

Identifies this line of text as an onscreen comment line only, not to be printed.
See *Comment lines.*

.IX *text*

Specifies text for an index entry.
Text for a subentry is *entry,subentry.*
For an entry that is a cross-reference only, type a hyphen before the text.
See *Indexing.*

Command	Description
.LH *n*	Sets the line height to *n*/48 inch. Takes effect immediately. Affects number of lines that fit on a page. (Default: 8/48 inch, 6 lines per inch) See *Line height.*
.LM *n*	Sets the left margin in column *n*. (Default: column 1) See *Margins.*
.LQ on/off	Turns near letter quality printing on and off for printers that have this capability. (Default: on) See *Near letter quality printing.*
.LS *n*	Sets the spacing between lines. *n* is a number from 1–9. 2 is double spaced, 3 is triple spaced, and so on. (Default: 1—single spaced) See *Line spacing.*
.MA *name=equation*	Defines the merge print variable *name* in terms of an equation that can contain numbers, operators, and data from other variables. When you merge print, WordStar puts the variable data in the equation, solves the equation, and inserts the result into the text to replace the variable name. See *Merge printing.*
.MB *n*	Sets the number of lines from the end of the text area to the bottom of the page. Takes effect immediately. The footer prints in this margin, so the number of footer lines plus the footer margin can't be greater than the bottom margin. (Default: 8 lines) See *Margins.*
.MT *n*	Sets the number of lines from the top of the page to the beginning of the text area. Takes effect on the same page if the command is on line 1; otherwise, takes effect on the next page. The header prints in this margin, so the number of header lines plus the header margin can't be greater than the top margin. (Default: 3 lines) See *Margins.*
.OJ on/off	Turns justification on/off. When on, WordStar inserts "soft" spaces between words so all wrapped words line up at the right margin. (Default: on) See *Justification.*

.OP
Omits page numbers.
Takes effect on the same page.
(Default: consecutive page numbers)
See *Page numbers.*

.PA
Starts a new page at the indicated line.
(Default: 55 lines of text before a page break)
See *Page breaks.*

.PC *n*
Sets the column where the page number prints when no footer is specified.
Takes effect on the same page.
(Default: column 28)
See *Page numbers.*

.PF on/off/dis
Controls print time reformatting.
If on, all paragraphs are realigned at print time.
If off, no paragraphs are realigned.
If discretionary, paragraphs are realigned if they contain variable data. Aligning begins at the line where the variable is inserted.
(Default: dis)
See *Aligning a paragraph* and *Merge printing.*

.PG
Turns printing of page numbers on if it was turned off with .OP.
See *Page numbers.*

.PL *n*
Sets the number of lines on the entire page (at 6 lines per inch).
Takes effect immediately.
(Default: 66 lines—6 lines per inch for an 11-inch page)
See *Page length.*

.PM *n*
Sets the left margin for the first line of all paragraphs.
Set to the left of the left margin for a hanging indent.
A setting of 0 turns off the paragraph margin.
(Default: no paragraph margin)
See *Paragraph margin.*

.PN *n*
Sets the page number at *n* and numbers subsequent pages consecutively.
Restores page numbers if .OP was previously used.
Takes effect on the same page.
See *Page numbers.*

.PO *n*
Sets the page offset, which is the number of columns between the left edge of the paper and column 1 of the text.
(Default: 8 columns)
See *Margins.*

.PS on/off
Turns proportional spacing on and off.
Actual proportional spacing character widths are determined at print time by the printer driver. The typeface or font is selected based on the character width (.CW) in effect in the text.
(Default: off)
See *Proportional spacing.*

Command	Description
.RM *n*	Sets the right margin in column *n*. (Default: column 65) See *Margins*.
.RP *n*	Repeats printing. Each time you print the file, it is printed *n* times. (Default: 1) See *Printing multiple copies*.
.RR *ruler*	Embeds the ruler line *ruler* in the file. The ruler line is in effect from the .RR line to the next .RR line or other command that changes the ruler line. The .RR line contains one character for each column from the left to the right margin. Characters are **L** Left margin (not needed if in column 1; if in column 2 or 3, use an overprinted line to enter it) **R** Right margin **P** Paragraph margin **!** Tab stop **#** Decimal tab stop **-** Column between margins See *Ruler lines*.
.RV *name, name, . . .*	Assigns variable names to the fields in your data file and reads the data into the variables when you merge print. Name each field in the data file. Don't use ampersands around the variable names in the .RV command. Each variable name can be up to 39 characters long. The order of the variable names in the .RV command must match the order of the fields in your data file. The .RV command must come after the .DF command and before any of the variables used in your master document. You can use as many .RV commands as you need. See *Merge printing*.
.SR *n*	Sets the sub/superscript roll on incremental printers to *n*/48 inch. The printer carriage rolls this amount before printing a subscript or superscript. **.SR 0** specifies the special sub/superscript font on some printers. (Default: 3/48 inch) See *Subscript and superscript*.
.SV *name, data*	Specifies that the variable *name* should be replaced with *data* when you merge print. Don't use ampersands around the variable name in the .SV command. The variable name can be up to 39 characters. See *Merge printing*.

.TC *text* Specifies text for a table of contents entry.
You can add a digit 1–9 after the .TC to specify that the entry is to be placed in one of up to 10 separate tables of contents.
See *Table of contents*.

.UJ on/off/dis Turns microjustification on and off for printers that can microjustify.
When on, in justified text the white space between words (and sometimes letters) is distributed as evenly as possible.
When off, each space is one character width.
When discretionary, the printer driver determines whether to microjustify.
(Default: dis)
See *Microjustification*.

.UL on/off Turns underlining of spaces between words on and off.
(Default: off)
See *Underlining*.

.XE *hex* Defines the custom print control turned on and off with ^PE.
Hex code is a maximum of 24 bytes long.
When used without a hex code, disables the ^PE print control.
See *Custom print controls*.

.XL *hex* Defines the form feed string.
Hex code is a maximum of 24 bytes long.
See *Form feeds*.

.XQ *hex* Defines the custom print control turned on and off with ^PQ.
Hex code is a maximum of 24 bytes long.
When used without a hex code, disables the ^PQ print control.
See *Custom print controls*.

.XR *hex* Defines the custom print control turned on and off with ^PR.
Hex code is a maximum of 24 bytes long.
When used without a hex code, disables the ^PR print control.
See *Custom print controls*.

.XW *hex* Defines the custom print control turned on and off with ^PW.
Hex code is a maximum of 24 bytes long.
When used without a hex code, disables the ^PW print control.
See *Custom print controls*.

INDEX

A

^A or ^← (Cursor left one word), 28, **139**
Abandoning changes to files (^KQ), 235
Accent marks (^PH), 115. *See also* Overprinting
Aligning
  at print time (.PF), 116, **193–194**
  columns of proportionally spaced text (^P@), 229
  entire documents (^QU), 66, **116**
  paragraphs (^B), 32, **116–117**
  stopping/resuming (.AW), 116
Alternate key (Alt), 180
Alternate pitch (^PN), 128, **217–218**
Ampersands in master documents, 97, 99, **188–189**
Apostrophes in master documents, 197
Applications of WordStar, 277–303
ASCII, 117
  character codes and extended character set, 335–336
ASCII printer driver, 225
Ask for variable in merge printing (.AV), 99, **191–192**
AUTOEXEC.BAT file, 330–331
Auto indent in nondocument mode (^6), 117–118
AUTOLF printer driver, 221
Auto patcher, 140, **320–322**
.AV (Ask for variable), 99, **191–192**
.AW (Aligning), **116**, 151, 257

B

^B (Align paragraph), 32, **116**
Backspace key, 31, **179**
Backup files (.BAK), 32, **118**
Bidirectional printing (.BP), 119
Binding space (^PO), 119
Blank lines, 119
Block & Save Menu, 42, **119–120**
Block commands, 42–44, **122–124**
Block math (^KM), 44, **120–121**, 123
Blocks
  case conversion (^K' or ^K"), 123–124, **126**
  column (^KN), 44, 72, 123, **129–131**
  copying (^KC), 123
  deleting (^KY), 123
  displaying (^KH), 44, **123**
  marking (^KB and ^KK), 43, **122**
  moving (^KV), 43, **123**
  of text, 41–46, **121–124**
  writing to a separate file (^KW), **123**, 161, 235
Boldface (^PB), 57, **124**
Booting, 3
Box drawing. *See* Drawing lines and boxes
BOX file, 155
.BP (Bidirectional printing), 119
Buffers, 333

C

C (File protection), 229
^C or PgDn (Scroll down one screen), 139, **236**
Calculations while merge printing (.MA), 192–193
Calculator (^QM), 73–74, **124–126**
  using parentheses, 125
  using scientific notation, 126
Cancel a command. *See* Undo and unerase
Caps Lock key, **126**, 179
Carriage return, 22, **158–159**, 179
Case conversion (^K' or ^K"), 123–124, **126**
Centering text (^OC), 35, **127**
Chaining files, 83–86, **208**
Character width (.CW), 127–128
  table of settings, 127
  with proportional spacing, 128
Clearing the screen
  with .CS, 206
  with ^\, 128
Colors
  of ribbons (^PY), 128
  on color monitors, 128
Column blocks (^KN), 44, 72, 123, **129–131**
Column replace (^KI), 123, **129**
Columns, 131–132

aligning proportionally spaced text (^P@), 229
aligning with ^P@, 132
changing pitch in, 132
using decimal tabs in, 132
using word wrap in, 131
Command files, 84, **132–134**, 209
in merge printing, 133
Commands, 19
complete list of, 337–358
Command summary, 337–358
Commas in data files, 94, **142**
Comment lines (.. or .IG), 134
Conditional dot commands, 105–107, **195–201**
examples of usage, 289–291
Conditional page breaks (.CP), 213
Conditions, setting up in master documents, 106
CONFIG.SYS file, xii, **xxii**, xxv, 333
Control key (Ctrl or ^), 22, **134**, 179
Converting nondocuments to documents, 147
Copying
blocks (^KC), 135
files at Opening Menu (O), 135
files while editing (^KO), 135, **161**
floppy disks with DISKCOPY, 8–10
original WordStar disks, xiii–xviii
Correspondence quality printing (.LQ), 207
Counting characters or words, 255–256
.CP (Conditional page break), 213
Creating files
document (D), 21, **135**
nondocument (N), 135
.CS (Clear screen), 206
Ctrl key (^), 22, **134**, 179
Cursor, 5, **136**
diamond, 27–28, **136**
keys, 136–137
list of commands, 139
movement, 27, 28, 65, **137–139**
Customizing WordStar (WSCHANGE), 139–140, **305–322**. *See also* Installing WordStar
auto patcher, 140, **320–322**
changing function keys, 309–310
changing settings, 308–315
creating extra versions, 306–307
entering printer control information, 320
leaving WSCHANGE, 315
list of WSCHANGE menus. *See* README information
Main Installation Menu, 306–307
returning to original settings, 315
user area, 316–318
using patches, 307, **315–320**
using prompts, 307–315
Custom print controls, 140–141
commands (^PQ, ^PW, ^PE, ^PR), 140
defining (.XQ, .XW, .XE, .XR), **140**, 151
CUSTOM printer driver, 221
.CW (Character width), 127–128

D

D (Open a document file), 21, **147**
^D or → (Cursor right one character), 28, **139**
Data files, 92, **141–143**, 170, 187
creating, 94, **142**
examples, 286, 289, 297, 301
naming fields for merge printing (.RV), 98, **190**
selecting for merge printing (.DF), 98, **190**
supplying variable information (.RV and .SV), 98, **190–192**
Data item separator characters, **142**, 190
Decimal tabs, **143**, 251–252
Default settings, 144
Defining data file for merge printing (.DF), 97–98, **190**
Delays before menus appear, changing, 144
Delete key (Del), 31, **144**, 179
Deleting
blank line (^Y), 145
carriage return, 145
character (^G), 29–30, **145**
dot command line (^Y), 145
files at Opening Menu (Y), 145
files while editing (^KJ), 145, **161**
left of cursor (^Q Del), 65, **145**
line (^Y), 30, **145**
page or text block (^KY), 145

paragraph (^QT ←┘), 145
previous character (^H or Backspace), 145
quick commands for, 65
right of cursor (^QY), 65, **145**
sentence (^QT.), 145
to specific character (^QT), 65, **145**
word (^T), 30, **145**
.DF (Read data file), 97–98, **190**
Dictionaries
loading into memory, 312
specifying location of, xxii–xxiii
spelling check, 243
Dictionary disk files, 324
Directories, **146–147**, 216
creating, 327–329
managing files in, 332
seeing a list of, 330
using with WordStar, 331–332
Directory display
at Opening Menu, 20, **146**
turning on and off (F), 146
while editing, 147
Discretionary reformatting, 193
DISKCOPY command, 8–10
Disks in the WordStar package, 323–325
Displaying
blocks (^KH), 44, **123**
directory contents, 20, **146–147**
dot commands (^OP), 219
messages (.DM), 206
print controls (^OD), 58, **219**
ruler lines (^OT), 232
soft spaces (^OB), 242
.DM (Display message), 206
Documents and nondocuments, 147–148
converting to ASCII files, **117**, 225-227
creating (D), 21, **147**
maximum size, 185–186
opening (D), 21, **147**
DOS, 3
Dot commands, 38–39, **148–154**
conditional 105–107, **195–201**, 289–291
displaying (^OP), 77, **219**
entering in text, 148–149
for merge printing, 97, 153–154, **189**, 285–301
for onscreen formatting, 151–153
for print formatting, 149–151
miscellaneous, 154
printing, 148
Dots, between words onscreen (^OB), 242
Double-spaced text, 181
Double strike (^PD), 154–155
DRAFT printer driver, 221
Drawing lines and boxes, 155–156
changing size of boxes, 156
editing inside boxes, 155–156
using function keys, 155
using shorthand, 156
Drive or directory, changing while editing (^KL), 161

E

E (Rename file), 231
^E or ↑ (Cursor up one line), 28, **139**
Editing, 25–32, **157**
Editing screen, 26
Edit Menu, 26, **157–158**
.EI (END IF condition), 106, **198–199**, 293–297
.EL (ELSE condition), 106, **198–199**, 293–297
Embedded ruler lines (^OO or .RR), 79, **233**
End key, 137
End page. *See* Page breaks
Enter key (Return or ←┘), 22, **158–159**, 179
Envelopes
merge printing, 286–287
printing, 283–284
Equations with merge print variables, 193–194
Erasing. *See* Deleting
Error messages, 159
list of, 259–276
Escape key (Esc), 179
Examples and tips for using WordStar, 277–303
Exclusion lists, 175–176
Exiting
from a document, 159. *See also* Saving files
from WordStar (X), 23, **159**
Extended character set, 159–160
ASCII character codes, 335–336

Extensions, 21, **160**

F

F (Directory display), 146
^F or ^→ (Cursor right one word), 28, **139**
.FI (File insert), 208
Fields, 92, 94, **142**
Filenames, 21, **160**
File operations while editing, 161–162
File protection (C), 229
Files, 2, **160**
  command, 132–134
  converting to ASCII, **117**, 225–227
  copying at Opening Menu (O), 135
  copying while editing (^KO), 161
  deleting at Opening Menu (Y), 145
  deleting while editing (^KJ), 161
  inserting into documents (^KR), 123
  on original WordStar disks, 323–325
  renaming at Opening Menu (E), 231
  renaming while editing (^KE), 161
  search order, 311
Finding
  character (^QG), 65, **165**
  character by searching backwards (^QH), 65, **165**
  page (^QP), 65, **166**
  your place, 165–166
Finding and replacing, 47–51, **162–165**
  aligning paragraph after replacement, 164–165
  backwards search, 50, 163
  global search, 164
  ignoring case, 163
  moving to beginning or end of file before searching, 164
  next occurrence (^L), 49, **162**
  *n*th occurrence, 164
  quick commands for, 65
  setting default options for, 165
  strings, 162–163
  using wild-card characters, 163
  whole words only, 163
  without asking for approval, 164
Flag column, 27, **166–167**
Floppy disks
  copying with DISKCOPY, 8–10
  formatting, 6–8
  tips for handling and storing, 10–11
.FM (Footer margin), 185
Footers
  alternating left and right (^PK), 168
  defining, 167
  dot commands for (.FO, .F1, .F2, .F3), 77, **167**
  examples of usage, 282–283
  margins in (.FM), 185
  page numbers in, 168
  print controls in, 168
  turning off, 167
Form feeds (^PL), **169**, 222
  defining form-feed string (.XL), 169
Form letters, 169–170
  creating different versions of, 105–108
  examples of, 285–301
Format definition in variable formatting, 201–203
Formatting
  default settings, 275
  documents, **33–40**, 76, 169
  floppy disks, 6–8
Function keys, 170

G

^G (Erase character), 29–30, **145**
.GO (Go to beginning or end of file and resume printing), 199
Go to page (^QI), 214

H

^H or Backspace (Erase previous character), 145
Hanging indentation. *See* Paragraph margin
Hardware, 2
Headers
  alternating left and right (^PK), 168
  defining, 167
  dot commands for (.HE, .H1, .H2, .H3), 77, **167**
  examples of usage, 282–283
  margins in (.HM), 185
  page numbers in, 168
  print controls in, 168
  turning off, 167
Help

at Opening Menu (J), 20, **172**
levels, 64, **171**
messages, 172
while editing (^J), **172**
.HM (Header margin), 185
Home key, 137
Hyphenation, 172–173
Hyphen help (^OH), 172–173

I

I (Index a document). *See* Indexing
^I. *See* Tab key *and* Tab stops
.IF (IF condition), 106, **195–197**, 290–297
.IG (comment line), 134
Incremental printers, 173
Indenting, 173–174
Indexing, 174–176
every word, 175
exclusion lists, 175–176
marking entries with .IX, 175–176
marking entries with ^PK, 174–176
Insert key (Ins), 31, **177**, 180
Insert mode, 31
turning on and off (^V or Ins), 177
Inserting text, 177
Installation disk files, 323–324
Installing WordStar, **xi–xxiii**, 178. *See also* Customizing WordStar
CONFIG.SYS file, xii, **xxii**, xxv, 333
copying original disks, xiii–xviii
identifying disk drives, xxi–xxii
location of dictionaries, xxii–xxiii
monitor installation, xx
printer installation, xx–xxi
printer selection, xx–xxi
special options for two floppy disk computers, xxvi–xxvii
upgrading from a previous version, xi–xii
WINSTALL program, xix–xxiii
INTERNAL.DCT, 243
Interrupting printing, 56, **216–217**, 224
Italics (^PY), 178
.IX (Mark index entry), 175–176

J

J or ^J (Help), 20, **171–172**
Justification (^OJ or .OJ), 39–40, **178**

K

^K (Block & Save Menu), 42, **119–120**
^K' (Uppercase to lowercase conversion), 123, **126**
^K" (Lowercase to uppercase conversion), 124, **126**
^KB (Mark start of block), 43, **122**, 129
^KC (Copy block), **123**, 130
^KD (Save document), 23, **235**
^KE (Rename file while editing), 161, **231**
Keyboard, 179–180
Keyboard macros. *See* Shorthand
Keyboard overlay, 12
^KH (Block display), 44, **123**
^KI (Column replace), 123, **129**
^KJ (Erase file while editing), 145, **161**
^KK (Mark end of block), 43, **122**, 129
^KL (Change logged drive/directory while editing), 161, **182**
^KM (Block math), 44, **123**
^KN (Column block mode), 72, 123, **129**
^KO (Copy file while editing), 161
^KP (Print while editing), 222
^KQ (Quit without saving), 22, **235**
^KR (Read file), **123**, 130
^KS (Save and resume editing), 235
^KV (Move block), 43, **123**, 130
^KW (Write block to a separate file), **123**, 130, 161, 235
^KX (Save and exit), 235
^KY (Delete block), **123**, 130
^K 0–9 (Place markers), 218–219

L

L (Change logged drive/directory), 182
^L (Find next occurrence), 49, **162**
Labels, merge printing, 287–291
Laser printer information. *See* README information
Layout, 180
default settings, 281
Leading spaces in master documents, 197
.LH (Line height), **180–181**, 278

Line drawing. *See* Drawing lines and boxes
Line feeds (^PJ), 180
Line height (.LH), **180–181**, 278
  table of settings, 181
Line spacing (^OS or .LS), 181–182
.LM (Left margin), 39, **183**
Logged drive or directory, 182
  changing at Opening Menu (L), 182
  changing while editing (^KL), 161, **182**
.LQ (Near letter quality printing), 207
.LS (Line spacing), 181–182

M

M (Merge printing). *See* Merge printing
^M (Hard carriage return), 158–159
.MA (Math), 192–193
  examples of usage, 293–301
Mailing lists, creating, 92
  merge printing labels for, 287–291
MAIN.DCT, 243
Main Installation Menu, **xx**, 306–307
Margins, 38–39, **183–185**
  bottom (.MB), 184
  customizing defaults, 311–312
  footer (.FM), 185
  header (.HM), 185
  left (^OL or .LM), 183–184
  page offset (.PO), 184
  releasing (^OX), 184
  right (^OR or .RM), 183–184
  table of default values, 183
  top (.MT), 184
Markers (^K 0–9), 218–219
Masking in variable formatting, 202
Master documents, **95–101**, 169–170, 187
  examples of, 285–301
Math Menu, 74, **125**
Math. *See* Block math, Calculator, and Merge printing
Maximum document size, 185–186
.MB (Bottom margin), 184
Memory usage, 186, **333**
Menus, 186–187. *See also* names of specific menus
  turning off, 171
Merge printing, 91, 101, 169–170, **187–194**, 285–303
  ask for variable (.AV), 99, **191–192**
  conditional commands, 105–107, **195–201**
  conditional operators, 195
  defining file (.DF), 97–98, **190**
  dot commands, **189–194**, 285–301
  ELSE condition (.EL), 198–199
  END IF condition (.EI), 198
  envelopes, 286–287
  GO command, 199
  IF condition, 195–197
  list of valid characters in number formats, 204–205
  mailing labels, 287–291
  mathematical calculations (.MA), **192–193**, 287–295
  nested .IF commands, 199–201
  print time reformatting (.PF), 193–194
  read variable (.RV), 190–191
  set variable (.SV), 192
  specifying conditions, 195–199
  using command files, 133
  variable formatting, **201–203**, 293–301
  variable number formatting **203–205**, 297–301
Messages while printing, 206
Microjustification (.UJ), 207
Microspacing, 207
Monitors, installing, xx
Move to specific page (^QI), 139, **166**, 214
Moving blocks of text. *See* Blocks
Moving the cursor. *See* Cursor
.MT (Top margin), 184

N

N (Open nondocument file), 92, **147**
^N (Insert blank line), 119
Naming fields in data files (.RV), 98, **190**
Naming files. *See* Filenames
Near letter quality printing (.LQ), 207
Nested .IF commands, 199–201
Nesting files, 83, 87, **208**
New page. *See* Page breaks
Nondocument Edit Menu, 93
Nondocuments, 117, **147–148**
  for creating data files, 92
  opening (N), 147

printing, 223
Normal pitch (^PA), 128, **217–218**
Numeric keypad, 27, **179**
cursor keys on, 137
Num Lock key, 27, **137**, 179

O

O (Copy file), 135
^O (Onscreen Format Menu), 35, **209–210**
/O in master documents, 99, **188–189**
^OC (Center line), 35, **127**
^OD (Print controls display), 58, **220**
^OE (Soft hyphen), 76, **172–173**
^OF (Ruler line from text), 233–234
Offset (.PO), 59, **184**
^OG (Temporary indent), 76, **174**
^OH (Hyphen help), 77, **172–173**
^OI (Set tab), 36, **251**
.OJ (Justification), 39–40, **178**
^OJ (Justification), 39–40, **178**
^OL (Left margin), 38, **183–184**
^ON (Clear tab), 36, **252**
On/off commands, 253
Onscreen Format Menu, 35, **209–210**
Onscreen help
at Opening Menu (J), 20, **172**
levels, 64, **171**
while editing (^J), 172
Onscreen tutorial, 13
^OO (Embed current ruler line), 76, 79, **233**
.OP (Omit page numbers), 59, **215**
^OP (Dot commands and print controls display), 77, **219**
Opening Menu, 19–20, **211**
Operating system, 3
Operators for specifying comparisons, 195
^OR (Right margin), 38, **183–184**
^OS (Line spacing), 181–182
^OT (Ruler line display), 76, **232**
Overprinting
character (^PH), 211–212
line (^P ←┘), 211–212
Overtype mode, **31**, 177
^OW (Word wrap), 76, **256-257**
^OX (Release margins), 38, **184**

P

P (Print a file). *See* Printing
^P (Print Controls Menu), 55–58, **219–220**
^P@ (Fixed position), 229
^P←┘ (Overprint line), 211–212
.PA (Page break), 59, **213**
^PA (Normal pitch), 128, **217–218**
Page breaks (.PA), 59, **212–213**
conditional (.CP), 213
Page Down key (PgDn), 137
Page format settings, 281
Page length (.PL), **213-214**, 278
Page numbers, 214–215
assigning specific number (.PN), 215
changing (.PN), 214
dot commands for printing, 215
examples of usage, 282–283
go to specific page, 139, **166**, 214
in user-defined footer, 215
omitting (.OP), 59, **215**
printing in specific column (.PC), 215
printing selectively, 61, **222–223**, 279–280
turning back on (.PG), 215
when nesting, chaining, or inserting files, 214
Page offset (.PO), 59–60, **184**
Page Up key (PgUp), 137
Paragraph indentation (.PM), 80, 174, **215**
Paragraph margin (.PM), 80, 174, **215**
Patching WordStar, 307, **315–320**
Paths, **216**, 311, 328
Pause during printing, 56, **216–217**
Pausing between pages, 217, **222**
^PB (Bold), 57, **124**
.PC (Print page numbers in specified column), 215
^PC (Pause printing), 217
^PD (Double strike), 154–155
^PE (User-defined custom print control), 140
PERSONAL.DCT, 243
.PF (Print time reformatting), 116, **193–194**
^PF (Phantom space), 217
.PG (Resume page numbering), 215
^PG (Phantom rubout), 217

Phantom rubout (^PG) and space (^PF), 217
^PH (Overprint character), 115, **211–212**
^PI (Insert special tab character), 252
Pitch, 128, **217–218**
  alternate (^PA), 217–218
  changing, 218
  coordinating with margins and character width, 218
  normal (^PN), 217–218
^PJ (Line feed), 180
^PK (Alternating left and right footers/headers), 168
^PK (Mark index entry), 174–175
.PL (Page length), **213–214**, 278
^PL (Form feeds), 169
Place markers (^K 0–9), 165, 218–219
.PM (Paragraph margin), 80, 174, **215**
.PN (Assign page number), 215
^PN (Alternate pitch), 128, **217–218**
.PO (Page offset), 59–60, **184**
^PO (Binding space), 119
^PQ (User-defined custom print control), 140
^PR (User-defined custom print control), 140
Previewing
  removing dot commands and print controls (^OP), 219
  removing print controls (^OD), 219
Print Controls Menu, 56–57, **219–220**
Print time reformatting in merge printing (.PF), 193–194
Print to disk, 117, 223, **225–227**
Printer drivers, 220–222
  customized (CUSTOM, SIMPLE), 221
  for printing to disk (PRVIEW, ASCII, XTRACT), 225–227
  generic (AUTOLF, DRAFT, TYPEWR), 220–221
  installing default, 220
  selecting at print time, 220
Printer ports, xxi, **314**
Printers. *See also* Printer Information brochure and README information
  adjusting speed, 223–224, **315**
  default, xxi
  incremental, 173
  installing, xx–xxi
  laser. *See* README information
  ports, xxi, **314**
  using more than one, 313-314
Printing, 55–56, **222–224**
  background, 223
  changing defaults, 312–313
  envelopes, 283–284
  files (P), 222–224
  form documents, 194
  interrupting, 56, **216–217**, 224
  merge printing (M), 222. *See also* Merge printing
  multiple copies, 60, 222, **225**
  nondocuments, 61, **223**
  options, 60–61, **222–223**
  pausing between pages, 60, **222**
  selected pages, 61, **222–223**, 273–274
  to disk, 223, **225–227**
  using form feeds, 60, **222**
  while editing (^KP), 222
  with another printer, 61, **223**
Printing screen
  displaying, 223
  messages, 224
PRINT.TST file, xxv
Program disk files, 324
Prompts
  answering, 227
  repeating answers (^R), 228
Proportional spacing (.PS), 228–229
  determining character width, 128
  with columnar text, 229
Protected menus, 229
Protecting files (C), 229
^PrtSc (Save and print), 235
PRVIEW printer driver, 225
.PS (Proportional spacing), 228–229
^PS (Underline), 58, **254**
^PT (Superscript), 249
^PV (Subscript), 249
^PW (User-defined custom print control), 140
^PX (Strikeout), 248–249
^PY (Italics or second ribbon color), 128, 178

Q

^Q (Quick Menu), 48, **230–231**

^QA (Find and replace string), 50, **162–163**
^QB (Cursor to beginning of marked block), 139, **165**
^QC or ^End (Cursor to end of file), 66, **139**
^QD (Cursor to end of line), 65, **139**
^Q Del (Erase left of cursor), 65, **145**
^QE or Home (Cursor to top of screen), 65, **139**
^QF (Find string), 49, **162–163**
^QG (Find character), 65, 139, **165**
^QH (Search backwards for character), 65, 139, **165**
^QI (Cursor to page number), 139, **166**, 214
^QK (Cursor to end of marked block), 139, **166**
^QL (Check spelling of document), 52–53, **243**
^QM (Math Menu), 74, **124–126**
^QN (Check spelling of word), 243
^QO (Enter word to be checked), 243
^QP (Find a page), 65, 139, **166**
^QQ (Repeat command), 231
^QQ^C (Screen-by-screen to end of file), 139
^QQ^R (Screen-by-screen to beginning of file), 139
^QR or ^Home (Cursor to beginning of file), 66, **139**
^QS (Cursor to beginning of line), 65, **139**
^QT (Erase to character), 65, **145**
^Q? (Word count), 255–256
Quick Menu, 48, **230–231**
Quitting files without saving changes (^KQ), 235
Quitting WordStar and saving latest changes (^KX), 235
Quotation marks
  in data files, 94
  in master documents, 197
^QU (Align entire document), 66, **116**
^QV (Cursor to last block location or find string), 139, **166**
^QW (Scroll up continuously), 66, 139, **236**
^QX or End (Cursor to bottom of screen), 65, **139**
^QY (Erase right of cursor), 65, **145**
^QZ (Scroll down continuously), 66, 139, **236**
^Q 0–9 (Cursor to place marker), 139, **165**

R

R (Run a DOS command), 234
^R or PgUp (Scroll up one screen), 139, **236**
^R (Repeat answer), 228
Ragged right text, 39–40, **178**
Random access memory (RAM), **186**, 333
README information, xxv
Read variables for merge printing (.RV), 190–191
Records, 92, 94, **142**
Reforming text. *See* Aligning
Renaming files
  at Opening Menu (E), 231
  while editing (^KE), 161, **231**
Repeating commands (^QQ), 231
Replacing. *See* Finding and replacing
Restore deleted text. *See* Undo and unerase
Return key (Enter or ↵), 22, **158–159**, 179
Right justified text, 39, **178**
.RM (Right margin), 39, **183**
Root directory, 216, **327**
.RP (Repeat printing), 225
.RR (Embed ruler line), 79, **233**
Ruler lines, 27, 35–36, **232–234**
  displaying (^OT), 232
  embedded (^OO or .RR), 76, 78–79, **233**
  from text (^OF), 233–234
Running a DOS command (R or ^KF), 234
.RV (Read variable), 97–98, **190–191**

S

^S or ← (Cursor left one character), 28, **139**
Saving blocks and writing to separate file (^KW), **123**, 161, 235
Saving files
  and printing (^PrtSc), 235

and quitting WordStar (^KX), 235
and resuming editing (^KS), 235
and returning to Opening Menu (^KD), 23, **235**
Scrolling, 28, 66, 138, **235–236**
Searching. *See* Finding *and* Finding and replacing
Search order for WordStar files, 311
Set variable for merge printing (.SV), 192
Sheet feeders (.BN), 236–238
form feed character requirements, 237
page layout requirements, 237
Shift key, 180
Shorthand, 66–72, **238–241**
characters, 68, **239–240**
commands, 239
control characters in definitions, 239
definitions, 239
definitions screen, 240
inserting current date and time, 239
Menu, 67, **238**
nesting and chaining definitions, 72
onscreen help with, 239
preset characters, 67, **239**
with mathematical calculations, 239
SIMPLE printer driver, 221
Soft carriage returns, 242
Soft hyphens (^OE), 172–173
Soft spaces (^OB), 242
display character for, 242
Spelling check, 51–53, **242–245**
adding word to personal dictionary, 244
bypassing this occurrence, 244
dictionaries, 243
entering replacement word, 244
ignoring word, 244
Menu, 52, **244**
rest of document (^QL), 52, **243**
user-supplied word (^QO), 243
using auto-align, 244
using global replacement, 245
word at cursor (^QN), 243
.SR (Subscript/superscript roll), 249
Starting a computer, 4–5
Starting WordStar, xxiv, 18–19, **245**
Status line, 27, **246–248**
list of possible messages, 246–248
Storing files. *See* Saving files
Strikeout (^PX), 248–249
Subdirectories, **146**, 216
Subscript (^PV)/superscript (^PT), 249–250
Subscript/superscript roll (.SR), 249
.SV (Set variable), 97–98, **192**

T

T (Table of contents), 250–251
^T (Erase word), 30, **145**
Tab key, 180
Tab stops, 35–37, **251–252**
clearing (^ON), 36, **252**
decimal, 143, **251**
in embedded ruler lines, 252
regular, 251
setting (^OI), 36, **251**
Table of contents, 250–251
.TC (Table of contents entry), 250–251
Temporary files, 252–253
Temporary indent (^OG), 174
Thesaurus (Word Finder), **xiii**, xxv
Toggles, 253
Training files for WordStar, 18
Triple-spaced text, 181–182
Turning a computer on and off, 4–5
Tutor disk, 13
files, 325
TYPEWR printer driver, 221

U

.UJ (Microjustification), 207
.UL (Underline spaces between words), 151, **254**
Underlining (^PS), 58, **254**
spaces between words (.UL), 151, **254**
Undo and unerase (^U), 30, **254–255**
Unprinted comments (.. or .IG), 134
User area in WSCHANGE, 316–318

V

^V or Ins (Insert mode on/off), 31, **177**
Variable formatting in merge printing, 201–203
examples of usage, 293–301
Variable names, 97, **187–189**

predefined, 189
with /O, 188–189
with formatting information, 189
Variable number formatting in merge printing, 203–205
examples of usage, 297–301
list of valid characters, 204–205

W

^W (Scroll up one line), 139, **236**
Wild-card characters
for deleting files, 146
for displaying filenames, 146
for finding and replacing, 163
WINSTALL program, xix–xxiii
Word count (^Q?), 255–256
Word Finder, **xiii**, xxv
files on disks, 325
Word processing, 2
WordStar examples and tips, 277–305
Word wrap (^OW), 256–257. *See also* .AW
Work disk, 18
WSCHANGE program, xi–xii, xix, 140, **305–322**. *See also* Customizing WordStar
list of WSCHANGE menus. *See* README information
WS.EXE file, 305
WSPRINT.OVR file, reducing size of, 310–311
WSSHORT.OVR file, 241

X

X (Exit WordStar), 23, **159**
^X or ↓ (Cursor down one line), 28, **139**
.XE (Define custom print control), **140**, 151
.XL (Define form-feed string), 169
.XQ (Define custom print control), **140**, 151
.XR (Define custom print control), **140**, 151
XTRACT printer driver, 226
.XW (Define custom print control), **140**, 151

Y

Y (Delete file), 145
^Y (Erase line), 30, **145**

Z

^Z or ^PgDn (Scroll down one line), **139**, 236